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The Commonwealth of Massachusetts

STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

CODEWORD

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September, 1991

Charles J. Dinezio
Administrator

building laws

APPEALS BOARD DECISION AFFIRMED BY COURTS

State Building Code Appeals Board meets twice monthly to examine requests for relief from the provisions of the building code. The Board is often caught in the middle of a situation where both the appellant and the building al are at a loss as to the solution. Thus, each party sits eagerly awaiting the determination of the Board; and most , each is happy with the decision.

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Publication No. 16,947-18-1100-9-91-C.R.
Approved by: Philmore Anderson III, State Purchasing Agent

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The Commonwealth of Massachusetts

STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

CODEWORD

illiam F. Weld
Governor

entaro Tsutsumi
Chairman

Charles J. Dinezio
Administrator

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The Board is not an arbitrator, although sometimes it may appear so. The Board is the legal authority vested with the ability to vary the requirements of the state building code. The Board does not sit in a vacuum arbitrarily making decisions. To the contrary, it conducts its hearings quite informally, encouraging participation by all parties. The foremost thought on each member's mind, however, is public safety, and this thought will not be swayed. It is sad to see this safety jeopardized, but sometimes it happens. The following story illustrates this point.

The story begins in January of 1987 when a registered professional engineer was employed to examine the structural stability of two apartment buildings. Through his study, the engineer found that the structures were in grave disrepair. In his report, he stated: "After viewing these buildings...I am amazed that they have not collapsed...the foundation walls appear ready to collapse, and if a collapse started, it would probably be progressive where the whole 97 foot length of foundation wall would fall inward into the cellar space...I would recommend that you [the owner] give serious thought to demolishing these buildings."[1]

The building commissioner and the owner of the property, naturally, were quite alarmed by this report. Armed with this information and pursuant to Massachusetts General Law the building commissioner convened a Board of Survey to view the property. After inspecting the premises, this Board, too, was deeply concerned with the condition of the structures. The Board stated that each building was in great need of repair, and believed that at least one of the two was structurally unsafe. To make matters worse, the Board also noted that vehicular traffic in the area further aggravated the structural deficiencies and could possibly cause collapse. But structural issues were not the only concern of the Board. Not surprisingly, because of the age of the buildings, the Board further noted numerous additional code related problems. Although some of the issues were somewhat minor, the culmination of these matters made for an extremely dangerous situation. In order to ensure the safety of the occupants as well as the safety of the surrounding public, the Board recommended that immediate action take place to repair the structures.

With these findings, the building commissioner was obligated to order the property owner to comply with the recommendation of the Board of Survey. After examining the associated costs involved in repairing the buildings, however, the owner realized that this avenue would not be feasible. Instead, he felt the proper remedy would be to tear down the structures. So, on July 13, 1988 he filed an application for demolition.

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DECISION AFFIRMED - CONTINUED FROM PAGE 1

Quickly, he was able to secure the required sign-offs from most city agencies, but he was unable to gain approval from the local Rent Control Board, as required by local ordinance. As a result, the building commissioner was unable to issue a permit for the work. Thus began a battle that was to rage for nearly four years.

This fight brought the owner before the State Building Code Appeals Board on two separate occasions; the first on January 10, 1988, nearly one year to the day since the start of this process. At this hearing, the owner requested the Board to order the city to issue the demolition permit, citing the engineer's report and the Board of Survey's account as evidence. Upon conclusion of the hearing, the Board affirmed the findings of the Board of Survey, stating that the buildings were at least unsound and possibly unsafe. The Board, then, ordered the issuance of the demolition permit.

The Rent Control Board immediately appealed to Superior Court. The court, however, did not pass judgement on the decision of the Building Code Appeals Board, but did remand the matter back to the Board on a technicality. Thus, on September 11, 1990 another hearing was convened before this Board. At the hearing, the Board maintained that the facts of the case were unchanged, and, again, upheld the owner's right to demolish the properties. The Rent Control Board, conversely, argued that in demolishing these buildings, valued numbers of rent controlled apartments would be removed from the market; apartments that neither the city nor the state could afford to lose. The Appeals Board held strong to its position, however, and in its decision of October 4, 1990, ordered the city, for the second time, to issue the demolition permit. Again, the Rent Control Board appealed this decision to Superior Court, alleging that, in his actions, the building commissioner was not in compliance with pertinent law as specified in Section 114.1 of the state building code.

At the conclusion of this endeavor, the Superior Court affirmed the decision of the State Building Code Board of Appeals. In its decision dated July 10, 1991, the court ruled that in matters such as this we are "... required to give due weight to the experience, technical competence, and specialized knowledge of [an] agency...".[2] In this case, the records show that the building commissioner felt that the buildings were in "...dire need of repair and as they stand, are probably unsafe..."[3]. Given this, the court must conclude that the judgement of the commissioner is valid and must support him in his findings. Additionally, the court found that because the properties were unsafe, the Appeals Board had rightly decided that the removal ordinance (an ordinance that requires an applicant to gain approval from the Rent Control Board prior to removing **any** rent controlled unit from the market) "...was not an applicable by-law which controlled the demolition of buildings".[4]

At long last, the owner appeared to have received the approval necessary to begin demolition. However, the city, once again, appealed the Court's decision. The next hearing will be before the Appellate Court. Here the issue will not be so much to examine public safety, but, to consider the impact of lost rent controlled units. This appeal will also address the ability of the Rent Control Board to **require** the expenditure of monies for corrective measures in such matters versus the owner's right to decide that, economically, these measures are not possible.

Fortunately, throughout this ordeal, the buildings have remained intact. Until they are demolished, however, public safety remains an issue. The members of the Board of Appeal, and surely all of us, are concerned with the availability of affordable housing in this state, and can sympathize with the effort of the Rent Control Board; no one should ever be denied adequate living facilities. However, when the safety of these residents is jeopardized, we need to think more practically, sometimes this means thinking more with our heads than our hearts.

[1,2,3,4] From the decision of Judge John P. Forte, Justice of the Superior Court, dated July 9, 1991.

MANUFACTURED BUILDINGS PROGRAM
AMENDMENTS TO LIST OF CERTIFIED MANUFACTURERS

Please make the following amendments to the list of certified manufacturers, which was issued on May 16, 1991:

1. The following manufacturers have now re-certified and their certifications are valid through April 30, 1992:

MC# 042	**Mark Line Industries, PO Box 227, Bristol IN 46507**
MC# 102	**Excel Homes, Inc., PO Box 69, Industrial Park Road, Mifflintown PA 17059**
MC# 105	**Home Kore Manufacturing Co., PO Box 515, Stoughton, MA 02072**
MC# 124	**Contempri Homes (Plant #2), PO Box 139, Taylor, PA, 18504-9780**
MC# 128	**Strattan Homes (Plant #2), One Mauro Avenue, PO Box 665, Knox, PA 16232**
MC# 138	**Williams Industries (The Scotsman Group) 18 Industrial Drive, North East, MD 21901**
MC# 145	**Kontek Industries Inc., 1200 Dawson Road, PO Box 98, New Madrid, MI 63869**
MC# 156	**Steeltec Manufacturing Inc., 210 Paulding Lane, Dallas GA**

2. The following new manufacturers have applied for and been granted certification through April 30, 1992:

MC# 157	**Inland Buildings (Plant #2), 19775 Sommer Drive, Waukesha, WI 53186**
MC# 158	**Rotondo/Penn-cast (Plant #3), PO Box 210, Telford, PA 18969.**

3. Change of Company name:

MC# 113	**Advanced Building Technology** (formerly American Home Technology) **One American Drive, RD 2, Box 276H, Tamaqua, PA 18252**

Please ensure that your list is amended accordingly. Just a reminder, if you are confronted with the name of a manufacturer which is not on your current list, nor included in the above amendments, please contact this office, (617) 727-3200, for verification of certification.

LOCAL BUILDING CODES

Under Massachusetts General Law (MGL) c 143 s 98 The Board of Selectmen of a Town, or the Mayor of a City may recommend to the Board of Building Regulations and Standards (BBRS) the adoption of rules and regulations which impose more restrictive standards than the state building code requires. If the BBRS finds that more restrictive measures are necessary due to special conditions prevailing within the city or town, they may allow adoption of those provisions. Local building codes are illegal, and have been since the inception of the state code in 1975, and requirements that are more restrictive than those of the building code, are not permitted until the BBRS has approved such provisions. When a city or a town makes such a recommendation, supportive technical information must be provided in order to substantiate the claim. The building official is required, by law, to enforce the provisions of the state building code and not those of local codes, portions of which may remain as relics of previous city or town building codes. Please make it a point to follow this guide should your municipality decide to submit a recommendation to the Board.

UPDATE ON THE CODE

The Fifth Edition of the state building code has been in effect for about one year. Although it has taken some adjustment to get used to the new format and size, it seems that most people now feel comfortable with the new edition. We have received many comments from both the public and private sector who have occasion to reference the building code; most of which have been favorable. There have, however, been a number of errors and omissions noted both by staff in our office and by other concerned readers. We are now busy compiling a listing of editorial corrections which will be examined at the upcoming November Public Hearing. Shortly after this, revised pages will be available. In the meantime, if anyone spots an error, please feel free to write our office with the correction.

CODEWORD

This issue's **CODEWORD** is actually two words; **riser** and **run**.

In the Fourth Edition of the building code we defined minimum dimensions for height of riser and depth of stair tread (run) in Table 616. These measurements ranged from a maximum riser height of 7½ inches to a minimum tread width of 10 inches in assembly and institutional buildings. All other occupancies, except one- and two- family dwellings, were to conform to a dimension of 8 and 9 inches, respectively.

In adopting the provisions of the 1987 version of the BOCA National Building Code, these requirements changed. Section 816.4.1 of the Fifth Edition, specifies the altered dimensions for stair treads and risers. All occupancies, it states, excluding one- and two- family dwellings, shall maintain a maximum riser height equal to 7 inches (minimum riser height must be at least 4 inches) and a minimum tread dimension equal to 11 inches. This change is not one that is intended to make life difficult for designers; change for the sake of change, so to speak. Rather, the modification is the result of extensive study relating to the "growing trends" of our population.

According to research reported in *The BOCA National Building Code Commentary, Volume 1 (1987)*; "The minimum tread depth of 11 inches is intended to accommodate the largest shoe size found within 95 percentile of the adult population...". Further, this study shows that in regards to "... geometrical possibilities of adequate foot placement, the rate of misstep with various step sizes and consideration for user's comfort and energy expenditure, ... the 11 inch minimum tread depth and maximum 7 inch riser height resulted in the best proportion for stairway construction".

As individuals change and grow, so too must the regulations that affect them. Such is the case with this change. Not only do these more uniform stair dimensions add to the level of comfort one feels in ascending or descending a stairway, but also the study has proved, the new requirements enhance stair safety in that "..given a clear width, a stairway with a 7-11 riser tread relationship can accommodate approximately 10 to 20 percent more occupants than a stairway with the former [dimensions]...". With this change, the code has improved both safety and comfort. When goals such as these are achieved, our code is surely advancing in a positive direction.

(As an aside, the 4 inch minimum riser height is necessary to ensure that the user can visually identify that a step exists. Anything lower than this would only create a tripping hazard.)

CONGRATULATIONS

We are happy to announce some recent events that have both expanded the credentials and the families of some members of the BBRS, its staff and members of the Division of Inspection.

- Mr. Thomas Donovan a member of the Board of Building Regulations and Standards, has recently been appointed President of the Home Builders Association of Massachusetts.

- Mr. Bob Farley, Manager of the Elevator Division, was elected President of the National Association of Elevator Safety Authority (NAESA) in August. Bob is also up for re-appointment to his second term as a member of the Board of Directors for this organization.

- Mr. Fred Barton, Supervising District Engineering Inspector for the Engineering Division, has been appointed both Chairman of the American Society of Mechanical Engineers (ASME), Section IV Code Subcommittee on Heating Boilers, and a member of the National Board Inspection Code Committee.

- Mr. Rob Anderson, staff member to the BBRS, is the proud father of a new baby girl, Lauren Jean, born on August 3rd. And, Mr. Brian Gore, also a staffer to the Board (Technical Director) is the proud father of a baby boy, James David, born on May 31st. This is the first child for Rob and his wife Maureen, and the third for Brian and his wife Susan.

- Finally, we welcome Mr. Bob Pollock to the Division of Inspection. Bob brings a wealth of knowledge and experience to the position of office manager.

We wish each of these individuals much success with his/her new position in life.

RECENT STATE BUILDING CODE APPEALS BOARD DECISIONS

Section 126.7.11 (Contents of Decisions) of the code states: "Any decision shall not be considered by any person or agency as a precedent for future decisions."

Appeal Docket # 89-100

The Appellant testified that he was the architect for a 365 unit continuing care facility. The facility was designed as a cooperative housing arrangement where the tenant owns the dwelling and shares common spaces and services with other unit owners. The complex is to be managed by a separate entity (cooperative) who will act in the interest of all owners. The Appellant wished to vary the provisions of Section 2011.5 of the Fourth edition (Section 3112.4, in the Fifth Edition) which requires that each unit be separately metered. The Appellant indicated that since the building will be supervised by the cooperative, the allocation of and division of electrical billing will be monitored by them, not the dwelling owners. As such, the Appellant felt that to require separate meters for each unit would be burdensome, as well as, a duplication of effort.

No testimony was received from the local building official.

Following testimony, the Board found that the local building official had correctly interpreted the provisions of this section of the building code. The Board agreed that, since the control and management of the entire complex will be in the hands of the cooperative, there did not seem to be a compelling need to install separate metering devices. Further, there did not appear to be any adverse effects to the energy conservation portion of the code in that the billing will be scrutinized by the cooperative, as well. With this, the Board voted to vary the requirements of Section 2011.5 to allow a single metering scheme for the complex.

Appeal Docket # 89-101

The Appellant testified that he represented the owner of a single family home located in the southern part of the state where the local building official had refused to issue a building permit for the construction of a second story addition. The Appellant protested that the building official had declined to release the permit due to the inaction of the local Board of Health and Conservation Committee. The Appellant contended that the Health Department objected as to the capacity of the existing septic system. However, the Appellant explained, the septic system had already been approved by the Health Department, and that the addition would not affect the use of the system. Thus, it should not be considered as part of the current building permit application.

The local building official testified that he had not issued the permit because he was unable to acquire all the necessary signatures from local organizations.

Following testimony and review of documentation, the Board found that the local building official had misinterpreted the requirements of the building code. The Board further expressed concern as to the administrative methods for permit application that exist in the town. Section 114 (both in the Fourth and Fifth Edition) clearly specifies the necessary steps which the local inspector must undertake prior to issuing a building permit. The inspector must take care to determine that the application meets all requirements of the building code and other relevant law. This permit process, however, seems to dictate that all applicants submit to extensive procedures that require signatory authority from other parties. The Board recognized the all such signatures would be obtained prior to the issuance of the certificate of occupancy, but believed it should not hamper the permitting process. The Board, then, ordered the local building official to issue the building permit.

CHANGE IN PROCEDURE

The constructions supervisor's licensing program is now moving into its tenth year. Like most things, however, it is not without its problems. One of the greatest challenges of the program, is how to deal with those individuals who are alleged to have abused their license privileges. In the Fourth Edition of the building code, Appendix Q identified the method of license scrutiny under Section 1.5 entitled; Board of Examiners. This Board was designed to meet monthly in order to hear and rule upon complaints against construction supervisors. Also, a Board of Survey was established as an informal, local source of action. Unfortunately, this process proved too lengthly.

In order to deal with the situation, a new plan of action was needed. Thus, on January 29, 1991 at a regular meeting of the Board of Building Regulations and Standards "...it was unanimously voted to amend the Rules and Regulations for Construction Supervisors by deleting the Board of Survey and Board of Examiners and their functions and to establish instead a three-member License Review Committee to be appointed by the BBRS (Board of Building Regulations and Standards) Chairman, one of whom to be a representative of the Home Builders Association of MA and two to be BBRS Members, who are to meet on a scheduled basis (similar to the scheduling of the Appeals Boards) to hear complaints and render decisions, with authority to suspend or revoke licenses; with the first step of the complaint process to be an examination/resolution of the problem by the appropriate district State Building Inspector.".[1]

The initiation of this Committee should provide a more direct path for an individual to wage a grievance. Unlike the previous system, this method allows the State Inspector and the local inspector to meet with the aggrieved party and the license holder in an attempt to rectify the problem before a hearing is called. With this, both the owner (aggrieved) and the construction supervisor benefits; the owner, because his troubles are rectified and the construction supervisor, because he is able to resolve a problem without tarnishing his reputation. Of course, not all problems will be able to be resolved in this manner. For those that need to be brought before the Committee, the new process will provide a more active and cohesive system.

Since the Board of Survey and the Board of Examiner process has laid dormant for a number of months, once the new system is implemented, there will be a rush of activity to resolve backlogged cases. Once we catch up, however, we fully expect this system to provide quick and equitable results for all concerned.

MAY I SEE YOUR I.D., PLEASE ?

Speaking of construction supervisors, it seems cruel to beat a dead horse, but this one keeps rising to its feet to cause a rash of problems, just when we thought the poor thing was put out of its misery. The issue: ***Construction Supervisor's Licenses***. Many times in the past you have witnessed the request to check not only the physical license of a supervisor, but also to view the person's photo I.D.; ie: state driver's license. The problems that are created when such a simple procedure is not followed are immense.

One such problem recently brought to our attention is the purported use by contractors of licenses assigned to other individuals. Trying to resolve such a problem is both time consuming and costly - particularly when court action is involved.

How can one person obtain the license number assigned to another without the knowledge and/or consent of the authorized license holder? One way could be if this information is contained on the permit card posted on the construction site. Upon checking with a number of local building officials, we learned that this practice is being employed by some offices, but most indicated they were willing to cease the listing of the license number on the permit card in order to curb possible illicit usage.

If any locality is listing the construction supervisor's license number on the permit card as well as the application, we would suggest that this information only be included in the permit application since this is retained in the office and not made public.

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[1] Board of Building Regulations and Standards Meeting Minutes, January, 1991

MORE ON CONSTRUCTION SUPERVISORS

Recently it has come to our attention that there may be some confusion as to the extent of work allowed under this license. In order to clarify the matter, we have reprinted a portion of text from page five of the *Candidates Bulletin of Information (Copyright 1990)* for the licensing of construction supervisors. (This information is repeated in the text of the state building code under section 109, as well as in the *Rules and Regulations Governing Construction Supervisors*.)

There are two major forms of licensing construction supervisors (the Board also offers a test for the licensing of individuals involved in the supervision of masonry construction only, although not often administered):

1.) ***Unrestricted License:*** allows an individual to directly supervise persons engaged in construction, reconstruction, alteration, repair, removal, or demolition involving the structural elements of:

- buildings containing **less than 35,000 cubic feet** of enclosed space,
- one- and two- family dwellings or any accessory building thereto,
- buildings used for farm purposes, and
- retaining walls less than 10 feet in height at all points along the wall as measured from the base of the footing to the top of the wall.

2.) ***Restricted License:*** limits an individual to the direct supervision of persons engaged in construction, reconstruction, alteration, repair, removal, or demolition involving the structural elements of **one- and two-family dwellings only.**

Also, it is worth noting that the Board has ruled that a construction supervisor's license is not required (restricted or unrestricted) to **install roofing, siding or rooftop solar collectors, to construct swimming pools, or to erect signs or tents**. Please note, however, that the absence of a **license** requirement does not exempt a project from **permit** requirements.

SUSPENSIONS AND REVOCATIONS

A final note regarding construction supervisors. On August 20, 1991, the License Review Committee for the Board Building Regulations and Standards voted unanimously to revoke the Construction Supervisor's License of Mr. James Bishop, License Number 048356, effective immediately.

TERMS OF THE TRADE

This issue's Term of the Trade is caisson.According to the Construction Glossary, by J. Stewart Stein, AIA , FCSI, it is:

1.) Concrete cylindrical foundation or tubular pier filled with concrete.

2.) Shaft of concrete or other material formed in the ground by excavation and filling for the purpose of sustaining a load.Essential feature of a caisson is that the soil or rock at the bottom can be manually and visually inspected.

3.) Watertight box or cylinder used in excavating for foundations or tunnel pits to hold out water so that concreting or other construction can be carried on.

Parts one and two of the above definition are most applicable to the building code. Caissons vary in type and design, and are generally distinguished from piers in terms of their diameter. Section 1221.0 of the Fifth Edition of the building code examines a special class entitled: *Concrete-Filled Pipe with Steel Core Caissons.* Other types of caissons may be used as construction conditions warrant, as specified within Section 1213.2 of this same edition. Regardless of type, all caissons share one thing in common, when employed, they are an integral part of any building foundation.

EVERYTHING YOU EVER WANTED TO KNOW ABOUT THE FIFTH EDITION

Most of you know that our office conducted a series of educational seminars throughout the Commonwealth during the months of April and May so as to simplify the transition from the Fourth to the Fifth Edition of the code. These sessions were geared only towards identifying **areas of change** between the two texts. From most reports, these seminars seem to have been well received. Unfortunately, due to time constraints, we were unable to respond to all the questions that arose. We did, however, promise to dedicate space in upcoming issues of **CODEWORD** to address all those unanswered queries. So, in an attempt to "make good" on this commitment we offer the following.

Note: (We realize that this does not exhaust the list of questions. Some topics, such as the correct use group classification for colleges and universities will be addressed in other issues of **CODEWORD**. This topic, as well as some others, were too lengthly to include in this document. If, for some reason, we miss a particular question, let us know and we will try to incorporate an appropriate response in one of the forthcoming issues.) With this, let's examine the first question.

EMERGENCY ESCAPE

Section 809.4 of the Fifth Edition states that "Every sleeping room below the fourth story in buildings **of Use Group R** shall have at least one operable window or door approved for emergency escape or rescue.". The section continues to identify that the "...minimum net clear opening height dimension shall be 24 inches. [and] The minimum net clear opening width dimension shall be 20 inches." [for windows used for this purpose].

The question is: **Are tilt-in windows permitted to be used as an emergency egress if the only way minimum dimensions can be achieved is by tilting in the lower sash?**

Answer: **No.** The key to this response lies in the word ***clear***. The typical operation of a tilt-in window is illustrated in Figure 1 below. Because the sill projects beyond the vertical line of the window and the bottom sash rests on the sill when in the open position, full access to the opening is impeded. Also, in this position the window, in effect, forms a glazed bridge that the occupant would need to traverse in order to exit the building. Surely, this arrangement could only result in injury.

The correct manner in which to comply with this requirement is identified in Figure 2. The purpose of providing escape from bedrooms is to allow a person who is faced with an emergency when awaken from sleep an opportunity to quickly exit the building. (This requirement also allows ease of entry for fire service personnel with back packs.) To complicate this procedure is to steal valuable time from the occupant; time that may be the difference between escape and entrapment.

The *1987 BOCA Commentary*, expresses the intent of this section best, stating: "The net clear area and minimum dimensions assumes that the window is opened to its fullest natural extent without the need for **disassembly or destruction of the unit.**" [emphasis added].

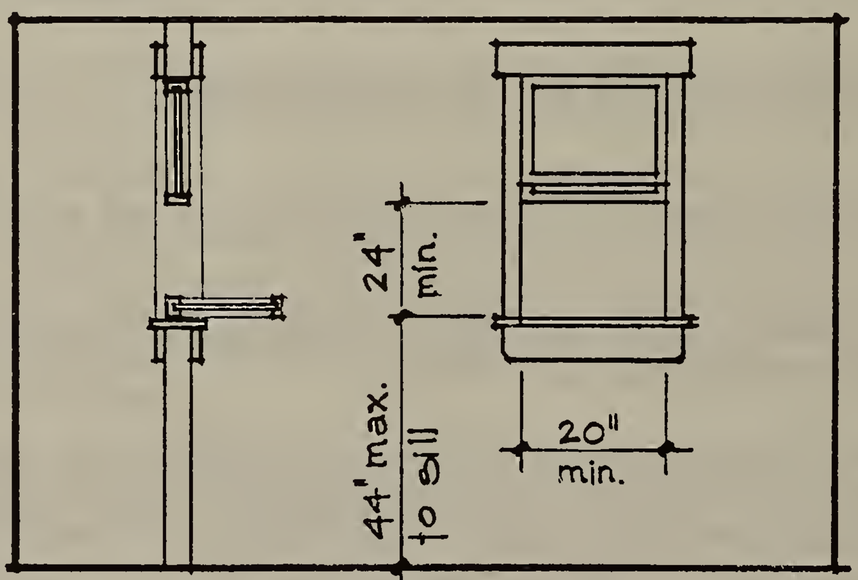


figure 1   figure 2

ANSWERS - CONTINUED FROM PAGE 8

SITE PLAN REQUIREMENTS

Section 113.6 of the Fifth Edition states that a site plan "...shall be filed prior to a permit being granted for the excavation for the erection of any building or structure ... showing to scale the size and location of all new construction and all existing structures on the site, distances from lot lines, the established street grades if they exist ... and proposed finished grades.

The question is: **When is a site plan required to be filed?**

Answer: ***Almost* always.** The reason for the qualifier *almost* is Section 113.5 requires an applicant to submit... three (3) copies of specifications and of plans ..." when filing for a building permit. However, this section further states that a "... building official may waive the requirement for filing plans when the work involved is of a minor nature.". This section really answers the question in reverse. It first states that plans must be submitted in **all** cases, but then places the determination in the hands of the building official.

The language is not meant to be vague or misleading. Rather, it intends to offer the building official some flexibility in determining when construction documents and, in turn, when site plans are required. The real question relates to the scope of work for a project. The small garage that someone may want to erect, for instance, may be a simple construction project, but if positioned on the lot incorrectly, it could be huge in zoning problems. If there appear to be questions as to the positioning of the building, then perhaps a properly delineated site would be in order. This is not to say that a building official must request a full set of plans for all small projects, too. Certainly, one would not require a set of construction documents for an *average* deck, but if that deck presented unique structural problems, some drawings or calculations may be necessary. If zoning requirements seem to be at issue, so, too, would be the case with a site plan.

If we consider what a site plan represents and why one would need to be filed, some questions may be resolved. A site plan, among other things, identifies municipal utilities, shows new and existing grades and, of course, locates the building on the property with respect to dimensional setback requirements. These requirements are specified in local zoning ordinances and these ordinances, as defined by MGL, Chapter 40A § 3, were established in order to prevent overcrowding of land, avoid undue concerntration of population, lessen street congestion and guard against a number of other undesirable conditions. The building official is most often the enforcing agent for zoning regulations, so it is his responsibility to ensure compliance. In most instances, then, it would be to the advantage of all involved to request a site plan during the permitting stage. If there was a problem, hopefully, it could be caught at that point.

As a final note on this issue, naturally, this guidance is more applicable to new construction than to renovation work. If someone is remodeling only the interior of a structure, construction documents certainly may be required, but because of the nature of the project, a site plan may not be necessary as part of this submission.

ORDINARY REPAIRS

Section 201, (GENERAL DEFINITIONS), of the Fifth Edition of the Building Code, defines "**ORDINARY REPAIRS**" under the definition of "**Repairs, ordinary**"; such definition reads:

> "Any maintenance which does not affect structure, egress, fire protection systems, fire ratings, energy conservation provisions, plumbing, sanitary, gas, electrical or other utilities. A building permit is not required for ordinary repairs."

The question: **Is window replacement considered to be an "ordinary repair"?**

ANSWERS - CONTINUED FROM PAGE 9

Answer: **No, window replacement is not considered an ordinary repair.** In replacing windows, one is impacting the energy provisions of the building code. Noting that Articles 31 and 34 of the Code impose requirements on both infiltration and "R' or "U" factors for a window system, even utilizing "replacement windows" that simply slip into the finish frame of the existing window system - i.e., installation does not impact the structural aspects of the window frame/header/sill - would still require the issuance of a building permit, simply because **energy conservation provisions** of the code are being impacted. However, please note that in order to install a "slip-in" replacement window (one that can be installed without affecting the structural members of the building or window frame) the installer does not need to possess a construction supervisor's license.

THE BUILDING OFFICIAL'S ROLE IN HANDICAP CODE ENFORCEMENT

Section 512.0 of the building code is entitled *Accessibility for the Physically Handicapped.* This section sets some minimum guidelines for accessibility and refers the reader to 521 CMR for further rules and regulations. This topic often causes confusion in the minds of building officials because of a seeming overlap of authority and discrepancies in requirements.

The question: **What is the building official's role in enforcing code requirements for the physically handicapped, and how are conflicts (ie: handrail extensions, stair tread nosings, etc.) addressed?**

Answer: In the same manner that the State Board of Building Regulations and Standards was created via Massachusetts General Law, so too, was the Architectural Access Board (AAB).

Within the enabling legislation for the Architectural Access Board, guidance exists as to the responsibility of the Building Official in enforcing its regulations - the following being is from this law: "The provisions of this section (c22 s13A) and all rules and regulations made hereunder shall be enforced by the inspector of buildings, building commissioner, local inspector and inspector as defined in MGL c143, as to buildings under their respective jurisdictions. Said rules and regulations shall be deemed to be a **specialized code** [emphasis added]". (Specialized codes are addressed in Subsection 100.5 of the State Building Code).

Since Access Board regulations are a specialized code, clearly they are to be enforced by the building official, but the question remains as to what one does when these regulations conflict. The simple rule of thumb is that where explicit differences exist between AAB regulations and State Building Code (SBC) regulations, the explicit requirements of the AAB (521 CMR), shall be enforced, **when applicable**.

Examples of potential conflicts between these requirements, include the provisions governing the construction of interior or exterior stairs used as "required means of egress". AAB regulations, found in Section 28 of 521 CMR require that "... stairs shall be constructed without abrupt projection of tread nosings; ... that handrails shall be set on both sides of such stairs at a height of thirty-four (34) inches above the intersection of tread and riser; ... that open risers are not permitted and ... [that] the hand-grip portion of handrails shall not be less than one and one-quarter (1 1/4) inches and not more than two (2) inches in outside diameter...".

Conversely, SBC regulations, found in Sections 816, 819 and 828 of the Fifth Edition of the building code would allow abrupt projection of tread nosings; would allow for handrails to be set between thirty-four (34) inches and thirty-eight (38) inches in height when measured in the same manner as prescribed by AAB regulations; does not prohibit and therefore allows the use of open risers and allows for the use of handrails with a maximum cross-sectional dimension of two and five-eighths (2 5/8) inches; does not limit handrail shape to either round or oval nor does the building code prevent the use of handrails with sharp corners - the latter two items prohibited by AAB regulations.

Where such conflicts exist it is understood that the requirements of the AAB shall take precedent only where the AAB has jurisdiction. Otherwise, the Building Official shall enforce the explicit requirements of requirements of the state building code (780 CMR).

ANSWERS - CONTINUED FROM PAGE 10

TYPES OF SAFETY GLAZING

The building code requires that one install *safety glazing* in certain instances as identified in Section 2203.2.

The question: **How many types of safety glazing are there, and to what standard is safety glazing measured?**

Answer: In order to be classified as "safety glazing", glazing must meet or exceed the requirements of Consumer Product Safety Council (CPSC) Regulation 16 CPSC 1201. There are basically two types of safety glazing:

1. **Tempered Glass:** Tempered glass is regular float glass which has been heat tempered to produce an increase in strength and to produce certain physical characteristics within the glass which cause the glass to break into small non-angular pieces. An interesting point to note is that heat tempering process produces builts in compressive stresses in the glass and that it is not possible to cut this type of glass without the glass breaking as these built-in stresses are released. For this reason, tempered glass is "made to order" and each sheet will have an identifying etched label indicating that it is safety glass meeting the requirements of 16 CPSC 1201.

2. **Laminated Glass:** Laminated glass consists of multiple layers of float (or tempered) glass sandwiching a bonded interlayer of polyvinyl butyryl. This type of glass is normally produced in large size sheets, with each sheet having a single etched "safety glazing" marking. Typically this type of glazing is purchased by a glazing company in large sheets and cut to size as required. Consequently individual panes cut from a larger pane, may not have an identifying marking. Therefore under Section 2201.1 an affidavit from the glazing contractor should be furnished stating that the glass is safety glass meeting the requirements of 16 CPSC 1201.

Plexiglass and other such trade names are forms of plastic materials which may or may not meet the requirements of 16 CPSC 1201.......look for the appropriate labels.

Heat Strengthened and **Wire Glass** will not meet the requirements of 16 CPSC 1201 and are **not** safety glazing.

EGRESS ISSUES ASSOCIATED WITH ASSEMBLY USE CONTAINING MOVABLE TABLES AND CHAIRS

Although this particular issue was not questioned at the seminars, we have noted instances where it seemed to be creating problems. As such, we thought it would fit nicely into the format of this issue of **CODEWORD**.

The issue: A private secondary school, operating for many years, continues to utilize a main dining hall for its student dining. In late 1990, the local Building Official, in performing an annual inspection/certification of the premises and in accordance with the Fourth Edition of the Building Code (governing at that time), noted that the dining hall had an excessive number of tables and chairs to the point where when the dining hall was in use, with all tables occupied, there were no clear aisles available between the rows of tables and chairs.

The Local Building Official, observed that the dining hall, when occupied, essentially had no dedicated paths of egress and, therefore, cited subsection 606.1.1 (ASSEMBLY OCCUPANCY) and Subsection 418.4 (AISLES WITHOUT FIXED SEATING) of the Fourth Edition of the Code. The Building Official then ordered the governing school officials to develop a "seating diagram"; such diagram to be drawn to scale and which had to indicate approved exits, the location and number of all tables and chairs in the dining hall as well as the location of a salad bar and was to identify all aisles and the widths of these aisles. This "seating diagram" (plan) required the Building Official's approval and was to be kept on file by the Building Official for reference in future annual inspections/certifications.

The Building Official required that aisle widths were to comply with Subsection 418.4 of the Fourth Edition of the Code.

It is the view of staff at the SBBRS that given the circumstances as described above, the interpretation and requirements of the Local Building Official were both justified and correct for even if there were adequate exit doors, the question of public safety becomes of great concern.

Under the Fifth Edition of the Building Code the approach that might be taken when encountering the same situation as described above, would include:

1) Cite Subsections 804.2 (UNSAFE MEANS OF EGRESS) and 3200.4 (HAZARDOUS EXITWAYS) for "existing" buildings and issue an exit order in the form of a violation notice - in this manner the Building Official has formally put the building owners on notice that in the opinion of the Building Official, an unsafe egress condition exists and by indicating so, in writing and by dating such letter, the safety issues are then readily identified in a documented, timely fashion - the building owners can then attempt to resolve the matter with the Building Official or claim aggrievement under Subsection 126 (BOARD OF APPEALS) and file an appeal with a Building Code Appeals Board.

2) Require a "seating diagram" (plan) and any and all other information deemed necessary to force consideration of the "arrangement of required egress" per Section 801 (PLANS AND SPECIFICATIONS) and in conjunction with the **applicable** requirements of Sections 806 (OCCUPANT LOAD), 810 (EXIT ACCESS PASSAGEWAYS AND CORRIDORS) and/or 826 (ASSEMBLY AISLES)

IN THE CASE OF AN "ASSEMBLY" USE, SECTION 826, BECAUSE IT ADDRESSES A SPECIFIC TYPE OF AISLE, I.E., AN "ASSEMBLY" AISLE, OVERRIDES THE REQUIREMENTS OF SECTION 810 - ONE WOULD READ SECTION 826 IN A MANNER SIMILAR TO THE WAY ONE WOULD READ THE "SPECIAL USE AND OCCUPANCY" SECTIONS OF THE BUILDING CODE.

Note that in dealing with an "existing" building, all of the requirements that would be imposed for "new" construction would not apply; the requirement for safe egress from a building or portion of a building, is not "grandfathered" and should the Building Official deem egress hazardous in an "existing" building, it is the right and responsibility of the Building Official to so cite the hazardous egress condition.

BRACING MASONRY WALLS

Section 1112.0 of the building code sets forth structural requirements in consideration of the forces of wind with respect to buildings and structures. The State is divided into three zones in reference to wind loads. These zones are identified in Figures 1112.1A, 1B and 1C.

The question: **What are the guidelines on bracing masonry walls during construction?**

Answer: Reference Standards NCMA TR 75-B "Specification for the Design and Construction of Load Bearing Concrete Masonry" and BIA "Building Code requirements for Engineered Brick Masonry", section 4.8.1 and 5.13.1 respectively requires that "*........Adequate precautions shall be taken to prevent damage to the walls during erection by high winds.......*" ACI 531 (Revised 1983) Masonry Structures Building Code Commentary, page 531R-20, *Temporary Bracing and Shoring*, indicates that the masonry contractor is responsible for the design of temporary bracing of walls, and states that the actual field strength of the mortar should be considered when determining the nature and amount of bracing. The references, however, offer little practical guidance to the building official.

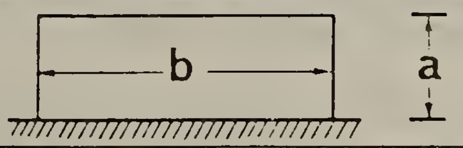
ANSWERS - CONTINUED FROM PAGE 12

TEK Note 72 (published by NCMA) however, does provide some degree of practical guidance regarding bracing of walls constructed of concrete masonry units during construction. The table below, which is excerpted from TEK Note 72, indicates the maximum horizontal spacing (in feet) of vertical bracing elements for hollow nonreinforced concrete masonry walls, varying in thickness from 6" to 12" for various wind speeds. It should be noted that bracing walls during construction depends upon many factors including, the age of the wall (actual field strength of the mortar); the construction techniques used (i.e. low or high lift grouting); the expected wind speeds, etc. For specific guidance the masonry contractor's construction specifications, or the individual project structural specifications should detail the bracing methods which are required to be followed. Incidentally, the TEK Notes published by NCMA are an excellent reference for contractors, engineers, architects and building officials. TEK notes and other valuable masonry publications may be ordered from the National Concrete Masonry Association, 2302 Horse Pen Road, Herndon, VA 22071-3406, telephone: (703) 713-1900.

Finally, if you are aware of any masonry wall collapses during construction, the registered design professional in charge of the work should submit a detailed report on the reasons for collapse. Please forward a copy of same to this office in order that we may also be kept abreast of any failures which may result in future code changes.

TABLE 2. New Pressure Coefficients, C_f

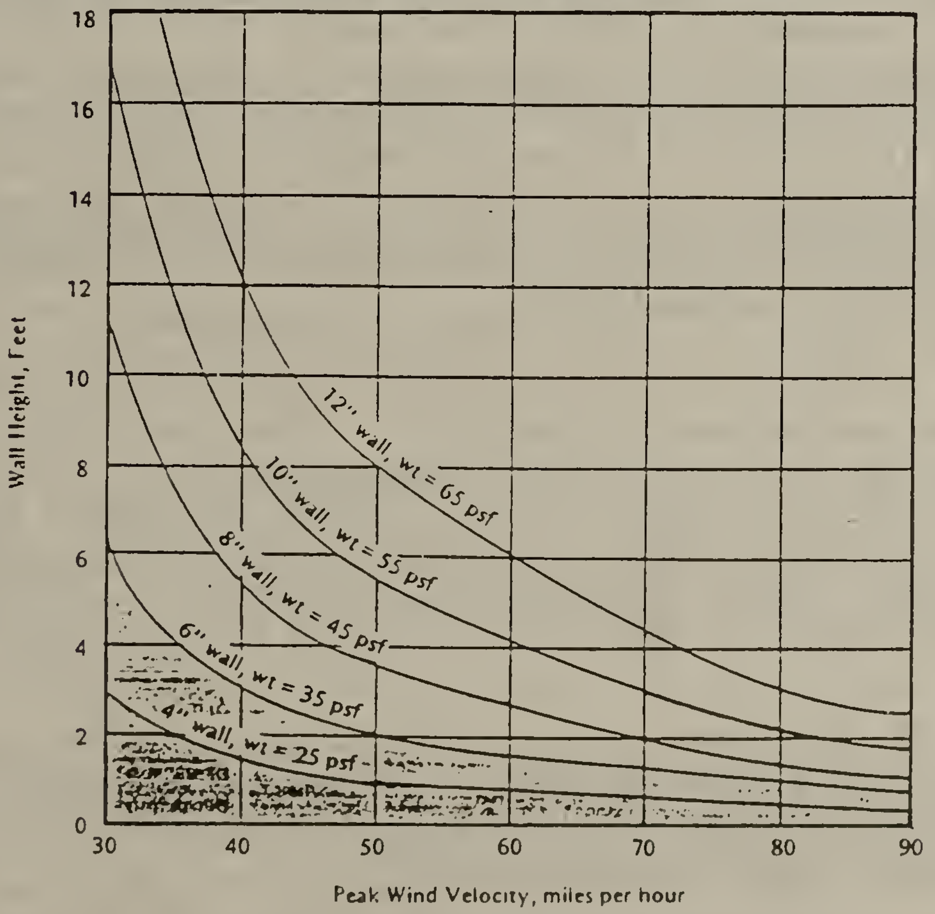
$$H = \frac{a}{b} = \frac{\text{height}}{\text{width}}$$



H	≤ 3	5	8	10
C_f	1.2	1.3	1.42	1.52

*Based on net pressure coefficients for signs at ground level (Table 10 of American National Standard A58.1–1972)

FIG. 1. Unsupported height of hollow block walls during construction. (Based on Table 2, C_f - 1.3 and Table 3, q_p for height = 30 ft., exposure B.



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ANSWERS - CONTINUED FROM PAGE 13

DOUBTFUL USE CLASSIFICATION

The building code identifies Use Group Classifications in Article 3. Although the code cites ten major categories of use, some of which are further divided into sub-categories, we must realize that there may be an occasion when a particular building seemingly does not fall into any of these uses. What happens then?

The questions: **In which use group should an "Artist's Loft" be classified? What is the use group classification of a battleship?** The answer to these and other similar questions can be found in Section 312.0:

312.1 General: When a building or structure is proposed for a use not specifically provided for in this code or the classification of which is doubtful, such building or structure shall be included in the use group which it most nearly resembles in respect to the existing or proposed life and fire hazard, and it shall be so classified by the building official.

The first task facing the building official is to make a determination of the predominant use of the building and identify the use (use group) it most nearly resembles. In making this judgement, the building official can be guided by Table F-1 of Appendix F as it provides, "A Detailed Classification of Occupancy by Hazard Index and Use Group". This Table, as it provides a more detailed listing of uses than is found in the Article 3 Classifications, can be an invaluable help in determining the, "...life and fire hazard" of the existing or proposed use.

In the example of the "Artist's Loft", a review of this table indicates that uses such as: a blacksmith's shop, a blueprinting establishment, canvas manufacture or repair, ceramics products manufacture (including pottery), photographic film (storage and studio), glass products, jewelry making, leather product manufacture, paper products manufacture, silverware manufacture, textile manufacture would all be classified in Use Group F - Factory, and assigned a hazard index of three (3), and the appropriate use group classification would be F-2 or F-1 (given the exact nature of the activity). It must also be determined that no storage of hazardous materials is present that would require its classification in Use Group H, High Hazard.

If, however, there are other uses present in the "Loft" the building official must identify those uses to determine if the building must be identified as a Mixed Use building and the appropriate requirements of Section 313.0, Mixed Use and Occupancy must be met. To qualify for consideration as an "Incidental" use (see Section 313.1.4) a second use within a building must first be "...supplemental to the main use," must be a use added to complete a thing, make up for a deficiency or extend or strengthen a whole. The incidental use must also be restricted to not more than ten percent (10%) of the floor area. While limited storage of the supplies used in the factory process can be considered "supplemental" and, therefore, "incidental" (if such storage is not hazardous and does not exceed 10% of the area). If, for example, there is a dwelling unit present, it must be considered as a second use, not supplemental to the main use and, therefore, not eligible to be considered "incidental". Now that the building has been identified as a Mixed Use building one of the separation options of Section 313 must be applied.

ANSWERS - CONTINUED FROM PAGE 14

Table F-1, however, also, includes the category "Home Occupations" and identifies it as a "B" use group with a Hazard Index of 2. The building official could determine this to be the use most resembled by the "Artist's Loft" if, in his or her judgement the type of production and the level of activity presented no risk or hazard to the occupants (and other occupants of the building) beyond that associated with a business occupancy. In this case the production activity (if limited in area and not hazardous) could be considered supplemental and, therefore, incidental, to the main use as a residence.

Obviously, the building official's determination will depend upon the facts and circumstances of each case; however while many homes have hobby rooms, factories do not usually provide sleeping accommodations for the employees. As always, the most conservative assessment is recommended.

In the case of a previously "mothballed" battleship, the same process can be applied, although with much less success. The ship is proposed for use as a place of assembly (function and dining rooms, a museum, etc.) and residential uses (dormitories, and other sleeping rooms). As a "building" it would be identified as a mixed use of several classifications (A and R). However, as the ship was and is not a "building", and, will therefore, undoubtedly contain a great number of violations when considered as one, the building official would do best to either treat the situation as a "Matter Not Covered" and in accordance with Section 101.3 inform the BBRS and the DPS of his determinations, or, alternatively, cause an appeal to be initiated by the owner.

"GRANDFATHERING" - YES and NO

Whenever regulations are instituted there are always certain individuals or things that need to be "grandfathered"; it is only fair. But where do you draw the line?

The question: **What is allowed to be "grandfathered" in terms of egress and ventilation requirements?**

Answer: The basis of "grandfathering" is found in Section 101.0 Applicability in the first exception to that section which states: Unless specifically provided otherwise in this code, all existing buildings and structures shall meet and shall be presumed to meet, the provisions of the applicable laws, codes, rules or regulations, bylaws or ordinances in effect at the time such building or structure was erected or substantially altered.

Thus, when an existing building is maintained in a "safe and sanitary condition" (See Section 104), and no building permit is required, the requirements of the code for new construction or alteration (Article 32) do not apply as the building is presumed to meet the requirements in effect at the time of its construction. Of course, at such time as a building permit for proposed alteration is required Article 32 becomes applicable.

Special attention must be paid, however, to the first phrase of the exception: "Unless specifically provided otherwise in this code,...". Section 702.1 and Section 804.2 are two sections of the code which specifically provide for and require remedial action(s) by the building official when unsafe conditions of light and ventilation, or egress are discovered. These sections require that no "grandfathering" be permitted when unsafe conditions of light and ventilation, or egress are identified.

Interior Environmental Requirements, Section 702.0 Existing Buildings, Subsection 702.1 Unsafe Conditions states: (see next page)

> In all existing rooms and spaces in which the provisions for light and ventilation do not meet the requirements of **this article** and which, in the opinion of the building official, are dangerous to the health and safety of the occupants, the building official shall order the required repairs or installations to render the building or structure livable for the posted use and occupant load.

Means of Egress, Section 804.0 Existing Buildings, Subsection 804.2 Unsafe Means of Egress states:

> In any existing building or structure not provided with exit facilities as herein prescribed for **new buildings** and in which the exits are deemed inadequate for safety by the building official, the building official shall issue an exit order in the form of a violation notice.

In both sections the building official is instructed to compare the existing conditions to the requirements of the code for new construction. This comparison is to guide the building official in making the judgement as to the dangers presented by and/or the adequacy for safety of the existing conditions and not necessarily to require that the provisions for new construction be met as the remedy. Conditions very much different from the requirements for new construction will most likely present a greater hazard than those only slightly different from the code for new construction. Having established this extreme measure of adequacy, the building official should then examine Article 32, Existing Buildings, and Appendix F, Reference Data (Existing Buildings) to determine if the existing conditions could be deemed acceptable as a "compliance alternative" if they were to be proposed as such, or if not, what compliance alternatives have been documented to remedy the existing condition. Yet another standard against which to measure the existing conditions is the BOCA, National Existing Structures Code (a referenced standard of Appendix A), which standard identifies acceptable standards and alternatives.

Having established this "spectrum of safety" from the existing conditions which do not meet the requirements for new construction to alternatives that are acceptable for existing buildings, the building official can then make his judgement of the adequacy/safety of the existing conditions, issue the appropriate order/violation notice and be prepared to consider permit applications proposing remedies.

MEANS OF EGRESS DOORWAYS - NUMBER OF DOORWAYS
VS
BUILDINGS WITH ONE EXIT FROM THE FIRST STORY
VS
BUILDINGS WITH ONE EXIT

There are two "exceptions" from the requirement of a minimum of two exits from every floor. Both of these "exceptions" (which occur in Sections 809.3 and 809.3.1) relate, essentially, to Section 812.2, Means of Egress Doorways, Number of doorways. This Section states:

> Every room or tenant space with an occupant load of more than 50 or in which the travel

> distance exceeds 75 feet shall have at least two egress doorways leading from the room or tenant space to an exit or corridor. (Exceptions follow.)

The question: **When is a single means of egress allowed?**

Answer: The requirements of this section are repeated in Section 809.3.1, Buildings with a Single Exit at the Level of Exit Discharge, the first exception to the requirement of two exits from each story, which requires:

> Only one exit shall be required in stories at the level of exit discharge having an occupant load not exceeding 50 persons an exit access travel distance not exceeding 75 feet in buildings of any use group:...(Exception follows)

The comparable section in the Fourth Edition, Section 609.3.2 explicitly stated, "Egress from all other stories shall comply with other applicable sections of this article." This restriction clearly applies as the "Exception" is given in all use groups only when the first floor discharges directly to grade (level of exit discharge is the level of walking surface immediately outside of the exit at the termination of the exit and start of the exit discharge).

The second exception is contained in Section 809.3, Table 809.3, which allows one exit for the entire building when the requirements of that table are met: the building is in the use group B or S-2 (Low Hazard Storage), the maximum height above grade is two stories, there are no more than 3,500 sq. ft. per floor, the maximum exit access travel distance is 75', the exit enclosure is of a fireresistance rating of one hour and the opening protection of the rated enclosure is also of a one hour fireresistance. No second means of egress is required from either the first or the second story of a building which meets these requirements.

This Table contains no specific limitation on occupancy; however, Table 806, Maximum Floor Area Allowances per Occupant, would limit the occupancy of each floor to 35 for the business use and 12 for the low hazard storage use. Should an occupancy load (determined by an "Actual Number", see Section 806.1) be proposed which exceeds the 35 (as computed by the use of Table 806), it is reasonable to require that a limit of 35 occupants be imposed, as the "exception" is allowed for buildings of limited size/occupancy.

This problem was directly addressed in the 1988 Supplement (1987 Proposed Changes) to the BOCA Code. To qualify for the use of this Section, a revised Table 809.3, further restricts the occupant load per floor to 30. Also, the restriction was added that buildings shall have, "...not more than one level below the level of exit discharge...". This addition clarified the requirement that the maximum vertical distance an occupant must travel to reach exit discharge is limited to one story. Other changes were made that are not immediately applicable to the requirements of the Fifth Edition.

LOAD FACTOR ADJUSTMENTS

Article 34 dictates maximum allowable spans for wood joists and rafters in one- and two-family dwellings.

The question: **Explain the duration of load factor adjustments used in timber design (as applicable to allowable bending stresses).**

ANSWERS - CONTINUED FROM PAGE 17

Answer: Wood has the property of carrying substantially greater maximum loads for short durations than for long durations. The National Design Specification for Wood Construction recognizes this property by allowing the designer to adjust the design values of lumber depending upon the length of time the lumber is loaded.

An example, consider the allowable fiber stress in bending (F_b) for Spruce-Pine-Fir (#2). Table 3403-8D indicates an F_b of 1000 psi for normal duration loading. The appropriate load factors and allowable adjusted values are shown below for various load durations:

Load Duration	Adjustment Factor	Allowable Stress
Permanent	0.9	F_b = 900 psi
Normal Duration of Load	1.0	F_b = 1000 psi
2 months duration (i.e. snow loading)	1.15	F_b = 1150 psi
7 day duration	1.25	F_b = 1250 psi
Wind or Earthquake	1.33	F_b = 1330 psi
* Impact	2.0	F_b = 2000 psi

Note that these factors are **not** to be applied to values for Modulus of Elasticity, E.

* Impact factor is **not** applicable to preservative treated lumber treated for marine exposure.

For Fire retardant treated lumber, an additional factor of 0.85 is to be applied to the value of F_b and 0.9 to the modulus of elasticity. (Note: other factors are applied for different properties)

We trust that these answers provide some guidance to each of those who asked the question, and to all others who may be concerned with these issues and similar situations.

Again, we have not forgotten the question regarding the correct use group classification for college buildings, or for the classification of a bed and breakfast. These and other topics will be covered in up-coming issues of **CODEWORD**.

MAY I CONTRIBUTE ?

As an aside, if any of you are wondering, you may certainly submit articles to our office that you wish to have printed in **CODEWORD**, or you may simply suggest a topic that you like to have examined. We are always grateful for such input. Of course, we cannot guarantee that all articles will be printed exactly as submitted, but we will make every effort to address each topic that is suggested, in some manner.

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PELLET STOVES - AT ISSUE

With the high cost of sources of energy and the heating season upon us once again, many people are looking towards alternate or supplementary methods of providing warmth for themselves and their families. Passive wood stoves (devices that need to be manually stoked) have been a favorite over the years, both for their handsome appearance and for their cozy supply of heat.

The pellet stove has evolved from these earlier solid fuel burning models. Pellet stoves allow a person to fill a storage bin that is attached to the unit with fuel. The fuel (pellet) is then auger-fed to the burn chamber at a specific rate to keep the fire and heat roaring. This, of course, frees the person who would normally tend the fire to perform other tasks, such as sit back and enjoy the flame.

The December, 1990 issue of **CODEWORD** announced the approval of certain direct vent versions of a solid fuel burning device that uses **corn** as its source a fuel. Certainly, this is an innovative method for dealing with heating issues in terms of the environment (less destruction of trees) and in terms of the costs (of wood products).

Although many pellet stoves are fueled by wood products, they, too, can be operated with creative alternate sources such as corn kernels, rice coal or even walnut shells. (The type of stove would dictate the type of fuel.) However, with innovation sometimes comes problems, at least for regulators. All new ideas are subject to improvement as lessons are learned through operation. The test methods identified in the appendices of the building code are designed to help avoid expensive lessons. These tests are meant to challenge the operation of devices as they normally would perform when installed. The listing laboratory then labels the product to assure the buying public that some type of performance test was administered and the results were favorable. We all recognize the seal of Underwriters Laboratory (UL) as the most common marking.

When a new product such as the pellet stove is introduced to the market, testing becomes a problem. The standard tests for solid fuel burning appliances are intended to test passive devices, not actively-fed models. Although in some respects this may not be a great concern, it does raise at least one issue: how does the unit respond to negative pressure (not currently part of the required testing process). Thus, in the interest of public safety, the Board of Building Regulations and Standards has voted to take steps to address this matter. The following article details the path that the manufacturer, consumer and building official must take when selling or installing a pellet stove in the Commonwealth for the cited periods of time. In the future, proper testing may make much of this procedure unnecessary. Until such time, the following action is required.

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Approved by: Philmore Anderson III, State Purchasing Agent

PELLET STOVE BUILDING PERMIT REQUIREMENTS FOR THE FALL 1991/WINTER 1992 HEATING SEASON

NOTE: THE FOLLOWING INFORMATION IS ISSUED IN LIEU OF A MEMORANDUM DATED 12/13/91, SENT TO PELLET MANUFACTURERS SEEKING APPROVAL FOR SALE AND INSTALLATION OF PELLET APPLIANCES IN MASSACHUSETTS.

Pellet stoves/heaters/fireplace inserts are heating appliances that burn wood pellets, but may also be designed to burn rice coal, kernel corn, walnut shells, or other pelletized types of solid fuels. Such appliances typically possess numerous electro-mechanical devices that are subject to potential failure or abnormal operation. Because the existing Building Code requirements for solid fuel burning equipment did not anticipate pellet stove technology (the existing Code requirements - Section 3409 -were written some 10 to 15 years ago and were intended to deal largely with "passive", as opposed to electro-mechanically "active", solid fuel burning equipment), the State Board of Building Regulations and Standards (SBBRS) at it's December 10, 1991 meeting has approved an **"AFFIDAVIT PROGRAM"** for pellet appliances for the Fall 1991/Winter 1992 heating season.

In summary, each pellet appliance manufacturer must provide an affidavit to the SBBRS and to the manufacturer's sales representatives. To obtain the necessary building permit, the end-user shall provide to the local building department a copy of the affidavit referring to the specific pellet appliance which is to be installed.

Pellet appliances, in addition to being UL 1482 or ANSI/UL 737 labeled (which have been traditional requirements of the Building Code for all solid fuel burning appliances - Section 3409.2) will either:

a) have been tested to ULC S627 or ASTM draft standard E-91, revised draft 5/28/91, in a "negative pressure" environment and have demonstrated acceptable performance under such test conditions (acceptable performance includes satisfying requirements for minimum CO release into the test enclosure and additionally; demonstrating that burnback into the fuel hopper does not occur for either normal or abnormal operating states in a test enclosure at "negative pressure", relative to bulk air pressure);

OR

b) if not so tested, the manufacturer shall provide a carbon monoxide (CO) gas alarm with the sale of the pellet appliance.

These requirements are imposed on pellet appliances because there exists the possibility that should mechanical draft in the pellet stove fail and the building in which the pellet appliance is operating is tightly constructed, the pressure in the building could be lower than the bulk atmospheric pressure - particularly if the building has bathroom, kitchen or other exhaust fans operating. Under such conditions, a pellet appliance might backdraft into the building, or even burnback into the fuel hopper, where, depending on the manufacturer, from 20 to 150 pounds of pellets may be stored (note that even if the pellet appliance does not rely on mechanical draft, these "negative pressure" issues still exist).

From the perspective of the local building departments, it will only be necessary to advise applicants seeking a permit to install a pellet appliance that he must get the required affidavit from the manufacturer, and that the affidavit must be filed with the permit application.

There are two (2) types of affidavits, titles are shown on the next page.

PELLET STOVE REQUIREMENTS - CONTINUED FROM PAGE 2

One affidavit is entitled:

SOLID FUEL BURNING PELLET STOVE AFFIDAVIT

FOR PELLET STOVES SATISFYING "NEGATIVE PRESSURE" TESTING

(FALL 1991/WINTER 1992 HEATING SEASON)

the other is entitled:

SOLID FUEL BURNING PELLET STOVE AFFIDAVIT

FOR PELLET STOVES SOLD WITH CARBON MONOXIDE (CO) GAS ALARMS

(FALL 1991/WINTER 1992 HEATING SEASON)

Please note that the affidavit dealing with CO gas alarms, refers to requirements found on "page 1" of that affidavit (page 1 of this affidavit is simply the instruction sheet on how to properly complete the affidavit).

As this is an important issue that may affect many building officials in the coming months, we have reproduced below that portion of the instruction page addressing CO gas alarm requirements. (Note that it is the responsibility of the manufacturer to choose an appropriate gas alarm.)

REQUIREMENTS (CO GAS ALARMED PELLET APPLIANCES):

For the Fall 1991/Winter 1992 heating season, if "negative pressure" listing testing, per the methodology of ULC S627/CSA Standard B366.2, STANDARD FOR SPACE HEATERS FOR USE WITH SOLID FUELS, Section 12.3, or via the requirements of draft standard ASTM E-91, revised draft 5/28/91, STANDARD SAFETY SPECIFICATION FOR ROOM HEATERS, PELLET FUEL BURNING TYPE, Section 10.1.5, has not been performed on product inventory intended for sale in this heating season, it will still be required that pellet stoves, as solid fuel burning devices, be tested/listed to UL 1482 and/or ANSI/UL 737, as applicable (per Section 3409.2 of the Fifth Edition of the Massachusetts State Building Code); additionally, it will be necessary that manufacturers provide a carbon monoxide gas alarm, with the pellet appliance - the selection of the CO gas alarm shall be the responsibility of the pellet stove manufacturer, but said gas alarm will possess CO detection capability/sensitivity consistent with generally accepted national standards relating to safety, and be of such a design that a sufficiently audible alarm is sounded in the event of excessive backdrafting or in the event of burnback; both types of events causing excessive CO release to the habitable space of the building. The CO gas alarm shall be located either in the room in which the pellet stove is operating or shall otherwise be located to ensure early warning in the event of abnormal pellet stove operation (the gas alarm installation shall be per the alarm manufacturer's instructions and otherwise be in accordance with all applicable local, State and Federal requirements, and any additional requirements imposed by the pellet stove manufacturer). Should the gas alarm be energized via battery, the alarm should, if possible, be designed to warn the user of low battery voltage, or weakened charge. The pellet stove manufacturer shall provide the gas alarm and any and all necessary gas alarm instruction materials, as part of the equipment and materials furnished at the time of sale of the pellet stove.

Pages four (4) and five (5) that follow are samples of the affidavits that a building official must receive when an individual is applying for a permit to install a pellet stove. Please remember that this action is only required for pellet devices, not for passive devices that would be labeled through the normal testing procedure.

The Commonwealth of Massachusetts
Executive Office of Public Safety
State Board of Building Regulations and Standards
McCormack State Office Building
One Ashburton Place - Room 1301
Boston, Massachusetts 02108

(617) 727-3200

William F. Weld
Governor

Kentaro Tsutsumi
Chairman

Charles J. Dinezio
Administrator

SAMPLE

SOLID FUEL BURNING PELLET STOVE AFFIDAVIT

FOR PELLET STOVES SATISFYING "NEGATIVE PRESSURE" TESTING

(FALL 1991/WINTER 1992 HEATING SEASON)

To the State Board of Building Regulations and Standards: Date____________19___

I, ______________________________ as ______________________________

on behalf of ____,

a manufacturer of solid fuel burning pellet stoves/heaters/fire place inserts (circle appropriate products),

hereby certify that the following pellet heating appliances, by **explicit model identification**;

model(s):____

____

____,

have been tested, or tested/listed (circle appropriate information) per the "negative pressure" test requirements of either ULC S627/CSA Standard B366.2, or draft standard ASTM E-91, revised draft 5/28/91, and found to satisfy the applicable criteria of ULC S627/CSA Standard B366.2 or draft standard ASTM E-91, revised draft 5/28/91; additionally, burnback did not occur either during normal or abnormal "negative pressure" testing.

MANUFACTURER:____

SIGNED:____

TYPED OR PRINT NAME ABOVE:____

TITLE:____

On this ____________ day of ____________, 19___, then personally appeared before me, the

above named ____

and made oath that the above statements by him/her, are true.

BEFORE ME:

____

NOTARY PUBLIC
MY COMMISSION EXPIRES:______________________________ 19_____

The Commonwealth of Massachusetts
Executive Office of Public Safety
State Board of Building Regulations and Standards
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SAMPLE

SOLID FUEL BURNING PELLET STOVE AFFIDAVIT

FOR PELLET STOVES SOLD WITH CARBON MONOXIDE (CO) GAS ALARMS

(FALL 1991/WINTER 1992 HEATING SEASON)

To the State Board of Building Regulations and Standards: Date____________19___

I, ________________________________ as ________________________________

on behalf of ____,

a manufacturer of solid fuel burning pellet stoves/heaters/fire place inserts (circle appropriate products),

hereby certify that the following pellet heating appliances, by explicit model identification;

model(s):____

____

____,

sold, for use in Massachusetts, are equipped with a carbon monoxide gas alarm, in accordance with the requirements specified on Page 1 of this affidavit.

MANUFACTURER:____

SIGNED:____

TYPE OR PRINT NAME ABOVE:____

TITLE:____

On this ______________ day of ______________, 19___, then personally appeared before me, the

above named ____

and made oath that the above statements by him/her, are true.

BEFORE ME:

____
NOTARY PUBLIC
MY COMMISSION EXPIRES:____ 19______

IN-GRADE TESTING OF DIMENSIONAL LUMBER

Over the past twelve years the lumber producers of North America (Canadian Wood Council, Southern Pine Inspection Bureau, Western Wood Products Association) in conjunction with the U.S. Forest Products Laboratory have been undertaking a major testing program involving the testing, to destruction, of over seventy thousand (70, 000) pieces of dimensional lumber of all sizes and from all species groups. The object of the tests was to empirically (i.e. by testing actual sizes) reevaluate the design properties of commercially produced dimensional lumber. Historically, lumber design values have been obtained by testing pieces of 2 inch by 2 inch, clear (knotless) samples by the application of loads, and recording the stresses required to bend the samples to predetermined limits. Correction factors were then applied to each grade and species to account for the effect of knots permitted in particular grades. Basic theoretical design values were developed from these tests.

The ***in-grade*** approach used samples of lumber taken directly from mill stock and which had been inspected, graded (using current grading rules) and stamped by the lumber inspection agency's mill grader. Tests were performed on actual size and span in the selected grade. By this method, results were not extrapolated from a single clear 2 inch by 2 inch sample, but instead were derived from the actual size, span and grade of species. In addition to measuring the mechanical properties, other information such as the species, grade and size of the sample, the location of the mill, the sampling region, knot sizes, slope of grain and information related to rate-of-growth, were obtained.

Four primary properties of lumber were evaluated in order to obtain updated empirical design values for species of softwoods. The properties are:

- Fiber Stress in Bending, F_b
- Tension Parallel-to-Grain, F_t
- Compression Parallel-to-Grain, $F_{c//}$
- Modulus of Elasticity, E

Results of the ***in-grade*** testing program are reflected in the ***1991 National Design Specification for Wood Construction (NDS)*** published by the National Forest Products Association (NF$_o$PA).

Base Design Stresses have been developed for each grade and species group. In order for the designer to select the actual design stress for the particular member being designed, the Base Design Stress is required to be multiplied by "Adjustment Factors" which account for; ***a) Size (e.g. 2x4, 2x6, 2x8, etc.); b) Repetitive Member Factor; c) Duration of Load Factor; and d) Horizontal Shear Adjustment Factor.***

Results on individual species groups are mixed. Some species show an increased strength and modulus of elasticity; others show decreases in strength or modulus of elasticity. It is important to note that the actual design property is the property obtained ***after*** the appropriate design adjustment factors have been applied. Also important is the fact that the design values that have been applied for many years have proved to serve their intended purpose with no adverse effect and with no danger to the public.

The results of ***in-grade*** testing have not yet been accepted by any of the model code groups, nor have they been included in the Massachusetts State Building Code. As you are aware, amending any building code is a timely process. The results of ***in-grade*** testing have only been publicly available since September, 1991. The State Board of Building Regulations and Standards will be undertaking a full review of the results of the in-grade testing procedure and the proposed new base design values.

Until such time as the Massachusetts State Building Code adopts the 1991 National Design Specification (NDS) and the new dimensional lumber basic design values and methods of design contained therein, the applicable design standard remains the 1986 NDS, which should be referenced for dimensional lumber design values.

ROOF PONDS

Section 1110.4 of the Fifth Edition of the building code states that: "Roofs shall be designed for the maximum possible depth of water that may be ponded thereon as determined by the relative levels of roof deck, overflow weirs, scuppers, edges of serviceable drains, and the deflected shape of the structural elements. In determining the maximum possible depth of water, all **primary** [emphasis added] roof drainage means shall be assumed to be blocked."

Although this paragraph appears clear, many question the correct interpretation of the phrase "... all primary roof drainage means shall be assumed to be blocked."

The literal interpretation of this phrase would lead one to conclude that only primary drainage needs to be considered blocked, disregarding secondary drainage. In most cases, this logic would hold true. However, there are stipulations. One, the secondary system must be located at a higher elevation than the primary system. And, two, the secondary system would need to be designed to provide at least as much drainage as the primary system in order to control ponding at that level.

SPECIAL ENGINEERING DETAILS

Section 113.7 of the building code empowers the local building official to request " . . . computations, stress diagrams and other essential technical data, prepared by a registered professional engineer . . . " and requires that " . . . All such plans and computations shall bear the Massachusetts seal of registration and signature of such qualified registered professional engineer. . ." when work requires special engineering knowledge. This requirement is not limited to controlled construction as many people seem to believe. If, for example, someone were designing a system of roof trusses for a single family residence, or a cantilevered porch for this same residence, the building official is well within his rights to require that the permit applicant supply design data (prepared by a qualified registered professional engineer or architect) to substantiate his choice of design.

UPDATE ON CERTIFICATION

The certification of building officials is an issue that has been on the minds of many people for a number of years. The topic is no stranger to this publication. Many times in the past **CODEWORD** has examined the pros and cons of certifying building officials. However, at this point in time it seems that most of the debate has died and that action to implement certification is in full swing.

Over the summer, the Certification Committee developed a program which specifies requirements for certification and follow-up educational criteria. This program has been reviewed and endorsed by all the local building officials' organizations. This marks the first of many very important steps that need to be taken in the process.

The next step is to file legislation enabling the Board of Building Regulations and Standards to "grandfather" all currently employed, qualified individuals into their positions as building officials. This legislation has been drafted and has been approved by the full Board of Building Regulations and Standards at its meeting of December 10, 1991. Of course, the legislation must be filed and passed in order to become effective, but this is expected to happen shortly.

It appears, then, that certification will become a reality. With it, the building official will be better prepared to face the challenges of the ever-changing world of building technology and regulation.

RECENT STATE BUILDING CODE APPEALS BOARD DECISIONS

Section 126.7.11 (Contents of Decisions) of the code states: "Any decision shall not be considered by any person or agency as a precedent for future decisions."

Appeal Docket #90-003

The Appellant testified that he was the owner of a four (4) story, fifty (50) unit apartment building. The Appellant had requested that a city health department visit the property to review certain problems at the facility. Unfortunately, a health official was unavailable, so a building official arrived in his stead. Upon examination of the property the building official noted that several apartments had access to only one means of egress from the building. As such, the building official issued a notice of violation under the provisions of Section 604.2.1 and Article 22 of the Fourth Edition of the code (Section 804 and Article 32, respectively, of the Fifth Edition). The Appellant recognized the problem as identified by the building official and as a responsible property owner quickly rectified the matter. However, the Appellant questioned the authority of the building official to make such a determination when the property was not undergoing any form of renovation. In fact, there was not a permit of any kind issued for work at the site. The Appellant asserted that the requirements of Article 22 are restricted to circumstances where repair or alteration is sought. Although the Appellant complied with the order, he requested that the Board make a determination regarding the authority of the inspector in such matters.

The local building official testified that he had visited the building and noted the lack of egress and so notified the Appellant. The inspector indicated that the building code is explicit with respect to hazardous exitways and that the code provides ample authority to allow him to carry out his actions.

Following testimony, the Board found that the building official is afforded the right of entry to any building in accordance with Section 112 of the building code (Same section applies in both the Fourth and Fifth Editions). Further, the Board found, that once the inspector is inside the building he may conduct inspections and issue orders as necessary. With respect to the number of exits, the Board found that the inspector had correctly interpreted the provisions of the building code and had rightly issued the notice of violation. Since the Appellant had complied with the order, no further action was necessary.

Appeal Docket #90-007

The Appellant testified that he represented the owner of a building to which an automatic sprinkler system was added as required by Section 437.0 (Open wells) of the Fourth Edition of the State Building Code (Section 606.0 of the Fifth). The system was installed in concert with the provisions of NFiPA (National Fire Prevention Association) Standard Number 13, without further regard for the building code. As a result, sprinkler heads were not placed around the perimeter of the opening or within two (2) feet of the draft stopping as required by Section 437.3.1. NFiPA Standard 13 requires similar but not identical placement, and the Appellant felt that the variation would not reduce the efficiency of the system.

The local building official testified that he had reviewed the system upon installation and noted the violation. The heads were installed about five (5) feet from the face of the wall and twelve (12) feet on center at the floor opening The remainder of the system conformed with the building code.

Following testimony, the Board found that the building official had correctly cited a violation of Section 437.3.1. The Board further found that, although the installation of the system in accordance with NFiPA 13 did not comply with the letter of the code, it appears to adequately address the safety concerns embodied in the code. Based on thi knowledge, the Board voted to vary the requirements of the cited system to allow the system to remain as constructed

TABLE 108 INSPECTIONS

Table 108 dictates the minimum number of required inspections and frequency of re-certification for buildings based on their use group classification. In most instances, the table is clear as to the criteria for inspection, but occasionally we get questions. The most recent is: Are Group Residences, Limited Group Residences and Group Dwelling Units meant to be inspected in accordance with the provisions of Table 108?

The response: for Limited Group Residences and Group Residences, yes; for Group Dwelling Units, no.

In explanation, it seems the confusion stems from the publication of the Fifth Edition of the code. In the Fourth Edition, the last line of this table reads: R-3 Limited Group Residences Annually One Year $40

Similar language appears in the Fifth Edition of the code for Limited Group Residences. Clearly, the intention has always been to inspect these uses with respect to this Table 108.

However, Table 108 in the Fourth Edition does not address Group Residences as a line item. Yet, in referencing the text governing this use under Section 424.7.2, we find that: "Before issuance of the final certificate of occupancy, the authorized inspectors shall mutually conduct a test . . . This test shall be conducted once a year in accordance with Section 108.5.1 for the purposes of recertifying both the building and occupants.". Turning to Section 108.5.1, we further find that " . . . inspections . . . [shall be made] . . . in accordance with Table 108." Since one now needs to reference the table, but is not given a line item to follow, he must use the guidance offered for Limited Group Residences to conduct his inspections.

In order to clarify this issue, a line addressing Group Residences was added to the table during the production of the Fifth Edition. However, the addition of this language seems to leave one guessing as to whether or not Group Dwelling Units need to be inspected also. After all, it is similar to the other uses.

Although, it may be similar, it is not the same, and Table 108 is silent in the Fourth with respect to inspection of Group Dwelling Units. The Fifth Edition is silent as well. Thus, it follows that it was never the intention of the code to require the inspection of Group Dwelling Units with respect to Table 108, **unless** the unit is part of a multi-family apartment building that **would** be inspected in line with the provisions of this table for the R-2 use group classification.

SUSPENSIONS AND REVOCATIONS

On August 20, 1991, the License Review Committee for the Board of Building Regulations and Standards voted unanimously to suspend the Construction Supervisor's License of Mr. Ralph D'Amelio, License Number 050688, for a period of one year beginning August 20, 1991 and ending August 20, 1992.

Please remember that the regulations governing the procedure for review of complaints regarding construction supervisor's has been changed. No longer do we follow the route described in 780-CMR-5. For the proper approach, see page 6 of the September 1991, issue of **CODEWORD.**

HOME OWNER EXEMPTION CLAUSE

Section 109.0 of the building code outlines the *Rules and Regulations* pertaining to certain programs that are managed by the Board of Building Regulations and Standards. One of the largest is the licensing of construction supervisors. This program was developed to ensure that individuals engaged in construction, demolition etc. (as detailed in Section 109.1.1) are literate in building code and other construction related matters. The program did not intend to preclude a home owner from performing work on **his own** premise. Thus, an exemption was added to Section 109.1.1 that reads: "A Home Owner performing work for which a permit is required shall be exempt from the provisions of this section . . ." The exception continues to state that: "For purposes of this section only, a "Home Owner" is defined as a . . . Person(s) who owns a parcel of land which he/she **resides** [emphasis added] or intends to reside . . ." Finally, the language concludes by stating that the exemption is valid only for ". . . dwelling[s] of six or less units, attached or detached structures accessory to such use and/or farm structures. A person who constructs more than **one home in a two year period** [emphasis added] shall not be considered a home owner".

EXEMPTION - CONTINUED FROM PAGE 9

A building official must be cautious in issuing permits in line with this exemption. As a matter of procedure, he should verify that the person applying for permit under this clause actually meets the cited criteria. A quick check of his driver's license can confirm his address. And, if plans are not filed with the application, a look at the local zoning map (if one is not familiar with the area of town) can substantiate the type of facility one might expect to find in the area. If the map shows a commercial or business zone, perhaps there would be reason for question.

CODEWORD

This issue's **CODEWORD** is; **sound attenuation**. The term is not defined within the building code, but according to the Construction Glossary, by J. Stewart Stein, AIA, FCSI, it means:

1.) Reduction of the energy or intensity of sound;
2.) reduction of sound energy as it passes through a conductor, resulting from the conductor's resistance to the transmission; or
3.) reduction in the intensity of a sound signal, measured in decibels.

Sound attenuation is an important consideration when one is involved in the design of residential structures. We have all heard the expression, "Those walls must be made of paper. I can hear everything that goes on next-door." The reason for this, is poo sound attenuation, or poor sound reduction.

In years past, it seems, not much attention was paid to this issue, but today, Section 714.0 of the Fifth Edition of the cod speaks to sound transmission control. This section requires a sound transmission class (STC) of not less than 45 for airborn noise for walls, partitions and floor/ceiling assemblies that separate dwelling units from one another or from public areas o service areas. The code further requires that the rating be determined in accordance with ASTM Standard Test Method E9 as listed in Appendix A of the code.

As one might expect, sound attenuation can be achieved by providing a greater quantity of dense materials. However, it is n as simple as adding additional layers of gypsum wall board. Although some benefit would be gained, a specific assembly mus be constructed in order to achieve meaningful results.

Just as a designer would indicate the Underwriters Laboratories (or comparable) design number corresponding to a one-hou fire rated partition on his plans, so too should he indicate the assembly chosen to accomplish the required STC rating. Bu how can one determine the rating of a particular assembly? A handy tool to have available is called the *Fire Resistance/Soun Control Design Manual*, published by the Gypsum Products Association. This manual is obtained by writing to: Gypsu Association, 1603 Orrington Avenue, Evanston, Illinois, 60201. In this document various conditions of construction a identified that indicate the sound rating (STC) for the assembly and the fire resistance rating achieved by the compositio It is important to note that the designer must adhere to the materials and construction details as specified in order to secu the desired rating.

HAPPY NEW YEAR

It seems impossible that another year has come and gone. We hope that each of you has made the most of this very difficu year and that the outlook for 1992 is a little brighter.

Again, we at **CODEWORD** would like to wish everyone a very happy and healthy 1992, and we look forward to providing ma more issues of our publication in the up-coming months to help serve and inform.

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MASS. BRS 1.3: 992/1

The Commonwealth of Massachusetts

STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

CODEWORD

Villiam F. Weld
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entaro Tsutsumi
Chairman

MAY 18 1992

March, 1992

Charles J. Dinezio
Administrator

REGISTRATION OF HOME IMPROVEMENT CONTRACTORS

Most people are probably aware that an act regulating the practice of home improvement contractors has recently been passed in the Commonwealth. This act amends Massachusetts General Law by inserting Chapter 142A, which sets forth requirements for individuals involved in home improvement work for owner occupied residences of one to four units.

Basically, the act contains two parts. First, it provides for the registration of contractors and subcontractors with the Administrator of the Board of Building Regulations and Standards (BBRS) The Administrator is referred to as the Director of the program in the act. The Director is responsible for disciplining registrants who violate any of the provisions of the act. Second, the act establishes a guaranty fund which is to be administered by an individual appointed by the Secretary of Consumer Affairs. This fund is endowed by scaled contributions (based on number of employees of a company) provided by all those who take part in the program. The fund is intended to repay damages up to a maximum figure suffered by consumers who have been mistreated by registered contractors. It is important to note that only individuals who have entered into a contract with a registered home improvement contractor can gain access to the fund. Before any monies are disbursed, however, the parties must settle the dispute either by arbitration or in the courts.

The act was passed at the of end the last calendar session. Regulations are currently being written and should be completed shortly. There **will be a delay in the implementation of the program**, however. To this point, the program has not been funded or provided staff, so an effective date has not been established. These essentials should be acquired within the next few months, and a definite date can be set. When determined, this date will be published in CODEWORD (hopefully the next issue).

The next logical question is, who is required to register in this program? The act states that all persons, partnerships and corporations who do residential contracting work as a contractor or subcontractor on **one to four-unit owner-occupied residential buildings** [emphasis added] shall register in the program. Residential contracting work is defined by regulation as "the reconstruction, alteration, renovation, repair, modernization, conversion, improvement, removal, or demolition or the construction of an addition to any pre-existing owner-occupied building containing at least one but not more than four dwelling units, which buildings or portion thereof is used or designed to be used as a residence or dwelling unit, or to structures which are adjacent and accessory to such residence or building, including but not necessarily limited to: garages, sheds, cabanas, poolhouses, gazebos".

Local building departments will be affected by this process. Each building permit and application must provide space for the contractor's registration number, and must inform all permit applicants that individuals who contract with **unregistered** persons are **not** entitled to access the guarantee funds. In lieu of creating new permit cards and applications, this information may be produced on a rubber stamp and applied to each document as necessary. Like the construction supervisor's program, the building official should always check the individual's registration name and number against his picture identification during this process.

REGISTRATION - CONTINUED FROM PAGE 1

The following two pages illustrate a **draft** of the application for registration as a home improvement contractor or subcontractor. The first page depicts the front of the two sided application, which addresses background information of the applicant. The second page, shows the reverse side of the application which provides detailed instructions to the applicant and identifies certain exemptions to the law.

Although the role of the building official will be somewhat limited in this process of registering home improvement contractors, we urge each official to become familiar with both the law and the corresponding regulations. An examination of the following pages is a good first step to this end.

REGARDING WORKERS' COMPENSATION INSURANCE

On October 17, 1991 a letter was issued from the Department of Industrial Accidents (the department) regarding workers' compensation insurance. The letter makes reference to Massachusetts General Law c 152 § 25C. This section of law states that any state or local licensing agency shall withhold the issuance of or renewal of a license or permit to operate a business or to construct buildings in the Commonwealth unless the applicant provides acceptable evidence that he has properly complied with the workers compensation insurance requirements.

Although this law has been in effect since 1987, it was not generally enforced. In recent years, the lagging economy has sparked a rash of claims against compensation funds. Many of these claims were filed against companies or individuals who were not properly insured. As is the case in the auto insurance industry, the burden of these claims was suffered by those who were legitimately insured, not by those who were responsible. In order to ease the drain on compensation funds, the Commissioner of the Department of Industrial Accidents has made it clear that the provisions of this law must been enforced.

Since a building official is in the business of issuing permits for construction, he must pay close attention to this topic. However, the department realizes that the building official is already overrun with his current duties, and does not wish to add to his workload. Yet, the fact remains that the law dictates that nearly all individuals involved in the construction industry must be protected by this insurance and the most expedient method to control this requirement is through the permitting and licensing process. Therefore, the building official must become involved.

In an effort to streamline the process, the department has generated an affidavit program. This affidavit places the onus on the applicant to honestly profess whether or not he is properly insured under the provisions of c 152 § 25C, or that the provisions of this law do not apply to him. The applicant's signature on this document bears witness, under the pains and penalties of perjury, that he is truthful in his assertion.

The affidavit is currently being refined by the department and will be ready for distribution shortly. When complete, it will be forwarded to each municipality. The building official must present the affidavit to each permit applicant for signature, and store the original with each job file. A copy may be provided to the applicant upon request.

There may be occasions when a building official is suspect as to the legitimacy of an applicant's claim to proper insurance coverage under this law. If this happens, he only needs to call the information line established by the department. Through this service he can quickly verify whether or not an individual (or company) is adequately covered and if his policy is current. The number to dial is (617) 727-4900; extensions 401 through 405 are available to ensure rapid assistance.

Almost every individual and company needs to carry workers' compensation insurance. The only exception is an individual who is classified as a sole proprietor. However, if he were to incorporate, he too would need this insurance. The provisions of MGL c152 § 25C, then, merely attempts to create a means to monitor a system that has been in place for years.

Publication No. 17,061-10-1100--3-92-est. cost per. copy-.21-C.R.
Approved by: Philmore Anderson III, State Purchasing Agent

THE COMMONWEALTH OF MASSACHUSETTS
Home Improvement Contractor Registration
One Ashburton Place - Room 1301
Boston, Massachusetts 02108

Registration No.

Check numbers

Effective Date

Expiration Date

FOR OFFICE USE ONLY

Application for Registration as a Home Improvement Contractor or Subcontractor MGL Chapter 142A, CMR 780-6

Date ____________________

1. Applicant name ______________________________
Print the name of the individual or business applying for the registration

2. Applicant type: ☐ Individual ☐ DBA ☐ Partnership ☐ Trust ☐ Private Corporation ☐ Public Corporation

3. Social Security or Federal ID Number ____________________ Number of Employees ____________

4. Address ______________________________ ( ) _____ - _________
Print street and Number (P.O. Box not acceptable) City State Zip Telephone Number

5. Individual responsible for Home Improvement Contracts ______________________________ ______________
Last First Mi Social Security No.

6. Title of individual responsible for Home Improvement Contracts ______________________________

7. Does the applicant or responsible individual hold any other construction related state, city, town licenses or registrations? __________ ☐ Yes ☐ No
If yes, complete the table below. Use additional paper if necessary.

Type license or registration	Issued By	License or registration number	Expiration Date	Name of License Holder

8. List all partners, trustees, officers, directors and major owners (10% or greater of ownership) of an applicant partnership or corporation below. Use additional paper if necessary. (See instructions on the back)

Last First, Middle initial	Title in Applicant Business	% Owner	Address

9. Is the applicant claiming exemption from the registration fee? (See the instructions on the back) ____________________ ☐ Yes ☐ No
If yes, include a copy of a current Construction Supervisor license or motor vehicle repair shop license or registration.

10. Registration fee enclosed. $ ____________________ Guaranty Fund fee enclosed. $ ____________________

Pursuant to Massachusetts General Laws Chapter 62C section 49A, I certify under the penalties of perjury that I, to my best knowledge and belief, have filed all state tax returns and paid all state taxes required under law.

____

Signature of applicant or applicant's representative Title held with applicant

A false answer to any question in this application constitutes grounds for suspension or revocation of the applicants' registration.

DRAFT COPY
DRAFT COPY
DRAFT COPY

2/11/92

APPLICATION FOR REGISTRATION AS A HOME IMPROVEMENT CONTRACTOR OR SUBCONTRACTOR

Requirements and Instructions

Summary Requirements of the Law

Registration & Enforcement Action
MGL Ch. 142A (Ch. 453, Acts of 1991) provides for the registration of home improvement contractors and subcontractors who accomplish home improvements on pre-existing owner-occupied one to four family residential buildings. Registrants who violate the provisions of this law are subject to enforcement action by the Administrator of the State Board of Building Regulations and Standards. Complete rules and regulations on registration and enforcement actions (780CMR-6) are available from the State Bookstore, Room 116, State House, Boston, MA 02133.

Exemptions from registration include: workers who work for contractors or subcontractors for a wage; in general, all licensed professionals or tradesmen, when they are working solely within the scope of their license, such as architects, electricians, plumbers (except for construction supervisors); the Commonwealth or its subdivisions; schools offering voc-ed courses or training in home construction or improvements; persons building their own home or personally doing their own renovations; where aggregate sum of payments for any bona-fide single job is under $1,000; part-time contractors or subcontractors whose gross revenue is less than $5,000 in the previous 12 months; persons enrolled as a full-time student for the last and next academic terms, and 2/3 of whose employees are so enrolled, and whose gross revenue is anticipated to be or has been under $5,000; persons who install air-conditioning systems, central heating, energy conservation devices, provide conservation services on behalf of a public utility, landscaping, interior painting, paper hanging, finished floor covering, tile, fencing, freestanding masonry walls, above-ground swimming pools, shutters, awnings, patios, driveways.

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Consumer Complaints, Arbitration, Guaranty Fund
The law also provides for a Guaranty Fund out of which consumers who have been aggrieved by registrants as determined by arbitration or court order may be repaid part or all of their damages under certain conditions. Complete rules and regulations covering arbitration, and the operation of the Guaranty Fund are promulgated by the Secretary, Executive Office of Consumer Affairs, and are available from the State House Bookstore.

Instructions for Application

Fill out front side of application printing with pen or typewriter.

3. Number of employees: For the purposes of this application and 780CMR-6, the number of employees shall include all construction related employees who worked 20 or more hours on the payroll in the weekly pay period prior to date of application.

5. If applicant's responsible person holds a valid construction supervisor's license under MGL C143, S94(i), and is also a substantial owner of the applicant entity (10% or more), the applicant entity is exempt from the registration fee. Enter license data in Question 7, and check "Yes" in Question 9 if claiming exemption from the registration or renewal fee.

8. Corporations or partnerships may include any official document which lists the required information, such as pertinent sections of the Articles of Incorporation, current Annual Report, registration as a foreign corporation as filed with the MA Secretary of State, or a copy of the current partnership agreement in lieu of listing the required information.
Organizations other than corporations must submit copies of any business certificates filed in cities and towns pursuant to MGL Chapter 110, Section 5.

9. If applicant or responsible individual is a licensed construction supervisor under MGL C.143, S.94(i) or a registered motor vehicle repair shop operator and is claiming exemption from the registration or renewal fee, check yes on Question 9, and include a copy of the current license/registration certificate with this application. (See instructions for Question 5, above).

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10. Enclose a certified check or money order for the registration fee (if the applicant is not exempt), and a separate check or money order for the guaranty fund. Please note on the check(s) which is for the Registration Fee and which is for the Guaranty Fund. Make checks and money orders payable to the Commonwealth of Massachusetts.

Mail completed application form, required documentation and check(s) to:

Director, Contractor Registration
State Board of Building Regulation and Standards
One Ashburton Place - Room 1301
Boston, MA 02108

Application Fee and Guaranty Fund Contribution

Registration Fee: **$100.00 (Renewable every two years)** See Note 1

Note 1: Individual Licensed Construction Supervisors in good standing under Chapter 143, Section 94 who register as an individual or as indicated in the instructions to Question 5, above, and individual motor repair shops registered in accordance with Chapter 100A, Section 2, are exempt from the registration fee only. To qualify for this exemption, the applicant must check "yes" in Question 9 and submit documentation that the license or registration fee has been paid along with its expiration date (copy of the current license or registration certificate will fulfill this requirement).

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Guaranty Fund Contributions:	**Zero to 3 employees**	**$100.00**
	4 to 10 employees	**200.00**
	11 to 30 employees	**300.00**
	More than 30 employees	**500.00** See Note 2

Note 2: The Guaranty Fund Contribution is a one-time fee at initial registration unless the fund becomes deleted. In such a case, all registrants can be assessed for an additional contribution in accordance with 780CMR-6 and MGL C. 142A. ALL APPLICANTS MUST SUBMIT THIS FEE.

UPDATE ON CERTIFICATION

As reported in the December 1991 issue of **CODEWORD**, legislation has been filed to allow the Board of Building Regulations and Standards to "grandfather" all currently employed, qualified individuals into their positions as building officials. The legislation has been filed by Senator William Q. MacLean, Jr. and has been assigned the number S 1431. It is currently in the Committee on Local Affairs. The co-chairmen of this Committee are Senator Martin Dunn of Holyoke and Byron Rushing of Boston. The bill has been scheduled to be heard **Tuesday, March 24, 1992 @ 11:00 am in Room A-1 of the State House**. The three associations will undoubtedly want to attend this hearing to show their support of the bill.

CODEWORD

This issue's **CODEWORD** is **modulus of elasticity**. To understand the meaning of the term, it is best to define each word separately. Modulus, according to The American Heritage Dictionary, Second College Edition, is a constant or coefficient that expresses the degree to which a substance possesses some property. Elasticity, according to this same source, is the condition of being elastic, or the property of returning to an initial form or state following deformation. Together, the modulus of elasticity is the measure of deformation of a material and its ability to return to its original shape. Simply put, it is the measure of stiffness or rigidity of a material. But what is the importance of this term with respect to the building code, and how is it applied?

Understanding the modulus of elasticity is important when determining the size and spacing of structural members for a building. If, for instance, we wanted to determine the **maximum** spacing and the **minimum** joist size for a new home, knowing only that the typical span dimension is 13'-0", how would this be accomplished?

First, we must determine the type of lumber that will be used in the construction of the floor. A common type of structural lumber in the New England area is spruce-pine-fir, so we will use this in our example. There are, however, a number of different species that are available in this area, so be sure to check the species and grade stamp that is marked on each structural member. Once the lumber type is established, we can turn to the visual grading tables located on pages 34-54 through 34-57 of the One- and Two-Family Dwelling Code.

Table 3403-8D (a portion of which is duplicated on the following page), illustrates the values for spruce-pine-fir with respect to size and grade. Although we may find some number 1 grade lumber in a given lot when purchasing stock, most often the grade will be not better than number 2. To be on the safe side, it is best to use the values for this grade in the analysis. Here, we see that for number 2 grade lumber of nominal dimension of 2 x 5 or wider, the modulus of elasticity is 1,300,000. (Each of these numbers is highlighted in the Table for ease of view.)

Armed with this knowledge, we can turn to the span tables for floor joists located on pages 34-70 through 34-73 of the code. Table 3405-1 (a portion is shown on the following page) illustrates the required modulus of elasticity in the far right column. The value is expressed in decimal form (1.3), but this is multiplied by 1,000,000 psi to equal 1,300,000, the figure that we want. Quickly assessing the table, it appears that we may design our structure using 2 x 8 joists spaced sixteen inches on center (16" o.c., shown highlighted). However, there is one more piece to this puzzle.

If we turn back to Table 3403-8D, we find that the value for normal duration in bending equals 1,000 (shown underlined). In Table 3405-1, the bending stress is shown just below the span. For a span of 13'-2", the figure is 1060 (highlighted), which is greater than the allowed value. If we move up one row, we see that we satisfy the span, with a dimension of 13'-11", but once again, we exceed the bending stress. Therefore, we must move to the top row which shows that we satisfy all pieces of the puzzle; the span exceeds the desired 13'-0" (at 14'-6"), the bending stress, F_b, is less than required (at 960), and the modulus of elasticity remains at 1.3. The true answer to our question, then, is 2 x 8's spaced at 12.0" o.c (sown bolded and underlined).

This example does not illustrate the most economical solution to the problem, for we end up with a floor system that exceeds the requirements of the code, and uses an excess of material. But the case clearly illustrates that each figure in each table has an express meaning. In this example, we achieve the desired results, but at an increased cost. Without knowing the significance of the modulus of elasticity (or the associated values), however, we could have been left with a structural system that was under-designed.

WHAT ABOUT THE NEW TABLES?

As a follow-up to the above story, the December 1991 issue of **CODEWORD** related a story about in-grade testing of dimensional lumber. As indicated in that story, some changes are imminent in structural span tables. However, the Board of Building Regulations and Standards has not yet adopted these changes, and even if they are adopted, the process described above will not change, only the number of choices.

TABLE 3403-8D
DESIGN VALUES FOR JOISTS AND RAFTERS - VISUAL GRADING

Species and Grade	Size	Design Value in Bending "F_b"			Modulus of Elasticity "E"
		Normal Duration	Snow Loading	7 Day Loading	
SPRUCE-PINE-FIR (surfaced dry or surfaced green)					
Select structural		1450	1670	1810	1,500,000
No. 1 & appear.	2 x 5	1200	1380	1500	1,500,000
No. 2	and	1000	1150	1250	1,300,000
No. 3	wider	575	660	720	1,200,000
Stud		575	660	720	1,200,000

TABLE 3405-1
ALLOWABLE SPANS FOR FLOOR JOISTS

size (in.)	Joist spacing (in.)	Modulus of Elasticity, "E", in 1,000,000 psi									
		0.4	0.5	0.8	0.7	0.8	0.9	1.0	1.1	1.2	1.3
2 x 8	12.0	9-10 440	10-7 510	11-3 570	11-10 640	12-4 700	12-10 750	13-4 810	13-9 860	14-2 910	14-6 960
	13.7	9-4 460	10-1 530	10-9 600	11-4 670	11-10 730	12-3 790	12-9 840	13-2 900	13-6 950	13-11 1010
	16.0	8-11 480	9-7 560	10-2 630	10-9 700	11-3 770	11-8 830	12-1 890	12-6 950	12-10 1000	13-2 1060

FIRE SEPARATION ASSEMBLIES

Where a fireresistance rating is required by the Code, Sections 903.1.1 and 903.1.2 are very explicit in their requirements that the assembly is to be tested in accordance with ASTM E119, or detailed in GA 600 or the Underwriters Laboratories Fire Resistance Directory. The test requirements of ASTM E119 subjects the entire assembly to the effects of a fire of controlled extent and severity, and monitors the temperature rise on the side remote from the flame. Also, the test subjects the assembly to a controlled stream of water from a fire hose to examine its integrity. The assembly is considered to have performed satisfactorily if: one, the structural character is maintained for the duration of the test and, two, there is no evidence that flames or hot gases have passed through the assembly. Once the test is complete, the assembly is assigned a fireresistance rating number, in hours. This number represents the length of time of the test.

The reason the Code requires that the assembly be tested to ASTM E119 is to provide a level of assurance that it will perform as anticipated under actual fire conditions. As a comparison, consider the question; what distance can a 2 x 10 span? Before the question can be answered, a number of parameters need to be known. For example, what is the applied load and what are the structural properties of the 2 x 10? (See **CODEWORD**, this issue.) Design properties of the lumber are obtained by testing. Knowing the design load and the structural properties of the lumber permits the question to be answered.

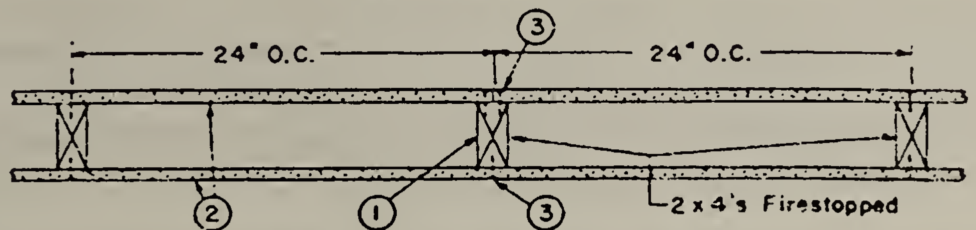
Now consider this question; what is the fireresistance rating of a loadbearing wall assembly consisting of 2 x 4 wood studs at 24" on center, with one layer of 5/8" gypsum wallboard on each side, fastened according to label requirements? Just as the structural design properties of wood are obtained by testing, so too are the fireresistive properties of the assembly. Tests of this assembly performed in accordance with ASTM E 119 have been made and the design is listed in the UL Fire

FIRERESISTANCE - CONTINUED FROM PAGE 6

Resistance Directory as Design No. U309 (assembly shown on following page). The indicated fireresistance rating is one hour. Note, however, that the Finish Rating for this assembly is 27 minutes, but the fireresistance rating is one hour. The Finish Rating is supplemental information developed from ASTM testing. This rating is the time that it takes for the combustible studs to reach 250 degrees F above ambient temperature. This figure indicates of the amount of protection offered to the combustible components (the studs) by the membrane (the gypsum wallboard).

The word assembly is intentionally highlighted because, in the final analysis, in a fire situation it is the assembly that provides the barrier to the spread of fire, not individual components. So, remember always look for the UL Design Number or the design listing in GA-600.

Design No. U309
Bearing Wall Rating - 1 HR.
Finish Rating - 27 Min.



1. **Wood Studs** - Nominal 2 by 4 in., spaced 24 in. o.c., effectively firestopped.
2. **Wallboard, Gypsum** - ⅝ in. thick, 4 ft. wide, nailed to studs and bearing plates with 6d cement-coated nails 1⅞ in. long, 0.0915 in. shank diam. and ¼ in. diam heads spaced 7 in. o.c.
    Georgia-Pacific Corp., Gypsum Div. - Type GPFS-C
    Gold Bond Building Products - Type FSW, FSW-G
    Pabco Gypsum Co. - Type C or PG-C
    Standard Gypsum Corp. - Type SGC or SGC-G
    Weyerhauser Co., Gypsum Div. - Type "DDN1"
3. **Joints and Nailheads** - Wallboard joints covered with paper tape and joint compound. Nailheads covered with joint compound. Gypsum plaster not more than ⅛ in. thick may be applied over the wallboard in addition to the specified joint treatment.
4. **Batts and Blankets*** - (Not Shown) - optional glass fiber insulation.
    Owens-Corning Fiberglas Corp.

* Bearing the UL Classification Marking

READING THE DIRECTORY

Vhile we are on the subject, the Underwriters Laboratory Fire Resistance Directory has always been a document that many eople have found difficult to decipher. Often, much time is wasted attempting to track down a particular assembly number. Most likely, the reason for this time consuming effort is that the reader is not familiar with the meaning of the prefix esignations. Once this secret is discovered, the labor is greatly reduced.

he 1991 directory, resolves this mystery on page five (5), as reproduced below. Although this information may appear on a ifferent page in other editions of this directory, the material remains the same.

Prefix Letters	Group of Classification
A, B* or C*	Floor-Ceiling Designs - Concrete and (Cellular only) Steel Floor Units
D, E* or F*	Floor-Ceiling Designs - Concrete and Steel Floor Units
G, H* or I*	Floor-Ceiling Designs - Concrete and Steel Joists
J or K	Floor-Ceilings Designs - Concrete
L or M*	Floor-Ceiling Designs - Wood Joist or Combination Wood and Steel Assemblies
N or O*	Beam Designs - For Floor-Ceiling Assemblies
P, Q* or R*	Roof-Ceiling Designs
S or T*	Beam Designs - For Roof-Ceiling Assemblies
U, V*, or W	Wall and Partition Designs
X, Y* or Z*	Column Designs

Indicates that the prefix letters are reserved for future use.

DIRECTORY - CONTINUED FROM PAGE 7

The design assemblies are arranged alphabetically by the prefix and in ascending numerical order with respect to the design number. From this list, one can easily determine where to turn in the directory to find a desired design assembly. Here, we see that the assembly shown on the previous page begins with a U, which correctly corresponds to the highlighted design.

SIZING-UP THE SITUATION

People frequently call our office inquiring as to the correct method to determine the occupancy of a building. Typically, the caller will comment that there seems to be a conflict between Section 806 of the Fifth Edition of the code and occupancy requirements dictated by other licensing agencies of the State. In actuality there is a misconception, not a conflict.

It is a common error to believe that the building code, of and by itself, mandates the allowed occupancy of a building. The building code only controls the number, arrangement, design and size of the required exit facilities for the maximum occupant load. Note the distinction made between the allowed occupancy of a building and the maximum occupant load of the building. There is a difference between the two figures.

In order to properly establish the number, size and arrangement of required exit facilities, a designer must identify the maximum occupant load of the building. Section 806.0 provides the rules for developing this load. However, these rules are only for purposes of sizing the required exit facilities and do not necessarily relate to establishing the occupancy of the structure.

In explanation, Section 806.1 states that "in determining required [exit] facilities, the number of occupants **for whom exit facilities shall be provided** [emphasis added] shall be established by the **largest number** [emphasis added] computed in accordance with each of Sections 806.1.1 through 806.1.3". Again, notice that this section accents the required exit facilities, not the control of occupancy.

If the building code were meant to dictate the allowed occupancy of a building, Section 806.1.1 would be unnecessary. As the title of this section suggests, it clearly affords the designer the opportunity to present the *Actual Number* (or actual occupancy of the building) of occupants in the building. Once this is established, the designer merely needs to base his calculations for egress facilities on this figure.

Although this appears fairly easy to understand, the presence of Table 806 seems to add confusion to the issue. This table attempts to set **minimum**, not **maximum** occupant loads for the purpose of establishing required exit facilities for a particular use. The table may be used to set the maximum occupant load if no other criteria is offered, but, again, this is not the true intent of the table.

Based on this information, consider the case of a day care center for children 2 years and 9 months or younger (Use Group I-2). The Code of Massachusetts Regulations (CMR) 102 Section 7.00 specifies requirements for the licensure and approval of day care centers. Just as the state building code (780 CMR) sets minimum standards for building construction, these regulations dictate standards for the operation of day care centers. The scope of the requirements range from the procedure for licensing the center to the criteria governing necessary physical activity of the program participants.

These regulations are quite detailed and, under Section 7.11(4), the document sets forth spatial requirements for certain areas within the day care center. This section, entitled *Indoor Space*, states that "the licensee shall have a minimum of **thirty-five (35) square feet of activity space per child**, exclusive of hallways, lockers, wash and toilet rooms, isolation rooms, kitchen, closets, offices or areas regularly used for other purposes . . .". Here the designer is given explicit guidance as to the minimum spacial requirements for the center. With this data, he can determine the **actual number** of persons that will occupy the facility and size his exit facilities accordingly.

If one relied on the guidance set forth in Table 806 to determine the number of occupants of the day care

SIZING-UP THE SITUATION - CONTINUED FROM PAGE 8

center, the results would be quite different. The table requires that sleeping areas for institutional uses shall consist of 120 square feet per occupant. Obviously, if one were to use this figure to determine his occupancy and occupant load, the number would be greatly reduced, but so, too, would the size of the exit facilities. The building code does not mean to punish designers who "load-up" buildings with occupants. Instead, it wants to assure that these individuals are afforded adequate opportunity to exit the building in a timely fashion should an emergency arise. It can be argued, in fact, that the code **wishes** to "load-up" each building to its maximum capacity. After all, the more occupants that are allowed in the building, the greater the size and number of the exits.

In summary, then, it is the designer who has the ability to determine the occupancy of his building, as long as all provisions of the code requirements fall in line. In terms of occupancy, the only real restriction that is implemented by the code is found in Section 806.1.5, Maximum occupant load, which states: "the occupant load of any space or portion thereof shall not exceed one occupant per 3 square feet of occupiable floor space". An occupied building may not be designed for a spatial relation less than this.

THE BUSINESS OF EDUCATION

The adoption of the Fifth Edition of the State Building Code, introduced many new concepts in construction regulation. Since construction technology changes with time, building codes must also change in order to keep pace. Some of the ideas presented in the Fifth Edition are merely common sense additions. Others are more difficult to understand.

One topic that seems to create confusion is the issue of educational uses. In a sense, this category is a foreign term to many who were used to the Fourth Edition, which did not recognize such a category. Previously, all educational facilities were classified under the provisions of assembly uses. Now, Section 304.0 tells the reader that there is a new category called the Educational Use (Use Group E). In itself, this information is not difficult, but then the code continues to state that all educational facilities do not fall under Use Group E. This is where the difficulty begins.

As indicated in an earlier article in this publication, things often appear to be mysterious when certain information is missing. Once the missing data is provided, the subject becomes clear. This seems to be the case with this topic.

In order to provide some missing information, let us first turn to the definition of the educational use. Section 304.1 states that all buildings or structures, or parts thereof, that are used by more than five persons at one time (including the instructor) for educational purposes through the twelfth (12th) grade are considered educational uses. However, this same section continues to reveal that "educational type uses with a total occupant load less than 50 shall be classified as Use Group B". Immediately, the code makes an exception to the use group for small facilities. Practically speaking, this exception would only work for the proverbial one-or two room school house.

Also, Section 304.1 states that school buildings "for business training or vocational training shall be classified in the same use group as the business or vocation being taught". In other words, if a technical school teaches **only** automotive repair the entire building would be classified as Use Group S-1. If, however, the school also contained classrooms for text book learning, the building would be classified as a mixed use facility (Use Groups E and S-1).

EDUCATION - CONTINUED FROM PAGE 9

To this point, learned how to classify educational uses up to the last years of high school, but what about beyond this level? The Fourth Edition lumped colleges into Use Group A-4, along with all other educational uses. Now colleges are generally classified as business uses. The reason for the qualifier is that, like the vocational school, a college must be broken down into its parts in order to determine the use of a building. Unlike most high schools, however, college campuses consist of many different buildings designed for varied purposes. Almost without fail, these buildings will bear a mixed use classification.

Sometimes, it is easier to explain one thing by referencing another. As proof, if we wanted to determine the correct use group classification for a police station, we only need to reference Table 303.2 of the Fifth Edition to find that it is considered a business. But if we consider the actual function of a police station, we realize that it is multi-dimensional. In most instances the station will provide areas of confinement, which is an institutional use, or the station may contain a courtroom, an assembly use. The station is only a business in theory. In order to truly establish its use, we must examine its operation. Then it is clear that the building is a mixed use facility.

The same logic applies to college facilities. As the code suggests, only classrooms with an occupant load of less than fifty (50) are considered business uses. However, most college buildings contain at least one large lecture hall or a laboratory that has the capacity for numbers greater than fifty. These areas **would** be classified as assembly uses. Therefore, the building would be a mixed use facility, not merely a business use.

It seems that the most confusing aspect of this dissertation is: why would we want to classify any part of college as a business use? If we stop to think about this, things may begin to fall into place. Generally speaking, individuals who attend college are mature young adults. The atmosphere in the classroom (at least theoretically) is one of intensity; where the students are alert and aware of their surroundings. It is assumed that such individuals will react quickly and orderly in the face of an emergency. This same correlation applies to the occupants of office buildings where employees are attentive and intimate with the building. The code, then, treats college classrooms as the use group that they most closely resemble, a business use.

Conversely, individuals who attend lower grades tend to be less mature, and less attentive to their surroundings. These children, it is believed, need to be afforded more protection by the code in order to assure their safety. So, again the code chooses to classify the group into the use that it most resembles. In this case, it is a new category (at least to readers of the Fourth Edition): the Educational Use.

It makes sense to divide educational uses into these categories, rather than group them together into one assembly use. After all, it is the intent of the code to provide minimum life safeguards to all those who occupy certain buildings. These precautions are expected to be reasonable and commensurate with the presumed hazard of the structure. They are not designed to impose excessive demands on all structures without regard to the inherent value of the structure or the level of freedom and intelligence of the occupants.

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CODEWORD

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CHARLES DINEZIO RETIRES

It is our unhappy duty to announce that Charles Dinezio, Chief of Inspections for the Department of Public Safety (the Department) and Administrator of the Board of Building Regulations and Standards (the Board) retired on June 30, 1992. His retirement was one of uncertainty up until the end. Charles hated to leave the organization he had cherished for many years, but finally decided it was time to go.

Charles was appointed to the position of Chief of Inspections/Administrator in 1983. From this time until the last day of June, he was deeply involved with all aspects of building code development and enforcement. Charles often brought his eloquent speaking manner to meetings throughout the state, whether it be to a gathering of the Southeast Building Official's Association or to the Fire Chiefs Association of Massachusetts, Charles always was willing to offer his views. At times, some would not necessarily agree with what he had to say, but all would agree that he always said it well.

Charles' career in government has spanned many decades. He gained much of his construction knowledge through hands on experience, and first put it to public use for the City of Boston as a Chief Rehabilitation Officer at the Boston Redevelopment Authority (BRA). In this position, Charles helped revive a city of beauty. Boston, was showing the ravages of time and many thought that certain sections of the city were lost and should be forgotten. Charles, however, saw through the dust and dirt and realized that the key to successful real estate is location, location, location. Charlestown and other surrounding areas of the city benefitted from this wisdom.

His days in the city always seemed to be his happiest, as he often reminisced of his work there. One of his great loves was to turn something in decay into something of beauty. In fact, he did just that with his own city address.

Perhaps, Charles' most significant contribution to the Commonwealth was the inception of the first uniform state building code. Prior to the first edition of the state code, nearly every city and town throughout the Commonwealth had its own set of building regulations. Some regulations were standardized, others were not. The result was that it was almost impossible to erect a legal, code complying building within the state. Not only was this condition frustrating for the design and building professions, it was also very costly. Through many hours of research and coordination, Charles and his staff were able to assemble a document, based on the Building Officials and Code Administrators National Code (BOCA), for publication at the start of 1975.

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Approved by: Philmore Anderson III , State Purchasing Agent

Since then, the state code has seen many revisions, and is now in its fifth edition; and since then there has been only **one** building code in the state of Massachusetts.

The adoption of the state code was surely a great achievement in Charles' career. But, there was also the development of the requirements for the existing buildings section of the code, which earned him Engineering News Record's "Construction Man of the Year". Charles realized that, as time progresses, and land become a scarce commodity, many more individuals will look towards renovating existing structures as opposed to developing new tracts. However, there were not any true guidelines to govern such renovations. It would be quite difficult to comply with the provisions of the code for new construction when performing a renovation. Therefore, Article 22 *Repair, Alteration, Addition and Change of Use of Existing Structures* (now Article 32) emerged.

Charles also managed dedicate time to some of the national building organizations. He served as president of the National Conference of States on Building Codes and Standards as well as the National Academy of Code Administration.

Obviously, Charles has been blessed with a long and satisfying career, and will have many pleasant memories to ponder. But, if we know Charles, he will not sit around too long remembering. Rather, he will put his knowledge and experience to good use in some other venture. We wish him well.

AND PAULINE, TOO!

Well, the early retirement option surely was a great benefit to those who were able to take advantage of it. For those of us left behind, however, it leaves a void. This void was created by the retirement of Pauline Stanton, Deputy Administrator to the Board of Building Regulations and Standards.

Pauline is that essential person in the office that causes the wheels to turn. Pauline is the individual that all offices crave, but only few have. She always made sure that all was functioning and would continue to function, sometimes without receiving the credit she deserved. But, in fact, almost all the praise bestowed upon Charles can also be awarded to Pauline, because she was by his side through it all. Pauline was one of the dedicated staff members who labored over the adoption of the state code and the creation of the Board. Pauline and Charles began their work together in the city of Boston and were together ever since. In his own words, "I couldn't have done it without you, Pauline".

Pauline brought a level of detail to her work that was unmatched. She gained this style through her experience in the legal field prior to her work in the public sector. And she maintained her high standards throughout her career.

Pauline, too, has much to remember, but she may have more time than Charles to reminisce. When she left, she was contemplating a trip to Greece.

MORE STILL

It's not over yet. We also lost two of our Distinct State Building Inspectors to early retirement. Arthur Ritacco and Dominic DiBaro also decided it was an offer they could not refuse. Both Arthur and Dom enjoyed a long and distinguished career in state government, and now look forward to relaxing with their families.

We wish each of these individuals much success and happiness in all future endeavors.

NEW DISTRICTS

As a result of Arthur and Dom's retirement, Peter Goodale, acting manager of the building inspection group, has developed revised districts for our remaining state inspectors. Look for the new plan in the next issue of **CODEWORD**.

WELCOME TO:

THE NEW COMMISSIONER

Thankfully, not all announcements in this issue are about retirements. We are pleased to welcome new members to the Department of Public Safety and to the Board of Building Regulations and Standards.

First, Mr. Larry Giordano is the new Commissioner of the Department of Public Safety. Mr. Giordano began his career in public service as a fire fighter for the United States Air Force. Following his military duty, he joined the police force in the town of Methuen, and served for fourteen years. He also served as a state representative from the town of Methuen for a six year period.

Larry remains very active in the affairs of his community, particularly as a member of the town's new school committee. He is a hands-on manager who loves to get involved with all aspects of the job. He brings vast and varied knowledge to the department as well as great enthusiasm, and he looks forward to the challenge of directing the department to a bright future.

THE NEW ADMINISTRATOR

Also, the Board of Building Regulations and Standards is pleased to announce that Mr. Thomas Rogers has been hired as the new Administrator to the Board. Mr. Rogers brings extensive knowledge of building construction and building regulation to the Board, drawn from his years as assistant building commissioner in the city of Boston and as manager at the Boston Water and Sewer Commission. Tom has also achieved great success in entrepreneurial ventures, ranging from general contracting and roofing to energy conservation services for commercial and residential facilities. Tom is affiliated with both the Massachusetts Building Commissioners and Inspectors Association and the Building Officials and Code Administrators International. Tom, too, looks forward to his new challenge.

THE NEW FIRE MARSHAL

Finally, Mr. F. James Kauffman is the state's new Fire Marshal. Mr. Kauffman comes to the department after a distinguished career at the National Fire Protection Association (NFPA). During his twenty-one years at NFPA, Jim helped develop behavioral techniques for avoiding human error in fighting fires, in public safety matters and in emergency medical situations. Jim also became the organization's expert in panic behavior and crisis management. Jim is considered a leader in loss prevention and risk management and has worked closely with national codes and standards organizations, as well as public service figures.

We welcome each of these new members aboard, and we look forward to working with each of them.

ETHICS COMMISSION ADVISORY

Can a building official also be a contractor in the same Community? The State Ethics Commission has advised that a Building Official cannot perform work in the community in which he serves as Building Official if the work in question requires the issuance of a building permit, or other municipal approval(s). However, a Building Official may perform work on (and deal with other town officials in connection with) his own residence. Arrangements involving inspections by a "third party" (or neighboring) building official do not relieve the Building Official of his obligation to comply with the Conflict of Interest Statute. The statute is equally applicable if the Building Official performs work on property not owned by the official even if no fee is involved. The statute is not applicable to a Building Official performing work on, or constructing his own home, or on property owned by the Building Official, providing said property is owned personally (ie: in his own name, not by a corporation or trust, etc.).

Ordinary repairs, as defined in the State Building Code (780 CMR 200.0), however may be performed on properties not owned by the Official, as such repairs do not require the issuance of a building permit (780 CMR 113.1, Exception #1), unless it is foreseeable that an issue may arise which would require intervention by the Building Official in his official capacity, whether or not the work is considered "ordinary repairs".

The above is equally valid for both full time and part time officials. If you have any questions or concerns regarding the Conflict of Interest Statute please contact the State Ethics Commission, Room 619, McCormack State Office Building, One Ashburton Place, Boston, MA 02108, Tel: (617) 727-0060.

RECENT STATE BUILDING CODE APPEALS BOARD DECISIONS

Section 126.7.11 (Contents of Decisions) of the code states: "Any decision shall not be considered by any person or agency as precedent for future decisions."

Appeal Docket #90-036

The Appellant testified that he was the coordinator for an institutional facility that was under construction in a major city. The facility was designed to house individuals who were awaiting trial within the county criminal courts. The facility had been the subject of a previous appeal before the state at which the occupancy load for the building had been set at 453 persons. The Appellant explained that he was not part of the original process and did not learn of the Board's actions until after the decision had been rendered.

Although the Appellant understood the Board's intent, he was now faced with two problems. First, was that the occupancy of the existing facility (from which all inmates were to be transferred) was greater than this figure and these people did not have anywhere else to go. In addition, the Appellant had applied to the Federal Court to gain approval to double bunk the prisoners in many of the single rooms, thus, aggravating the limit on occupancy even farther. In order to resolve the issue, the Appellant requested that the figure be adjusted to 653 prisoners. The state inspector in charge of the project felt that the request was beyond his authority since it would conflict with the determination of the original Board of Appeal. Therefor, he was appealing to the Board to revise the original occupancy figure.

In his defense, the Appellant presented testimony through a fire safety consultant. The consultant explained that the facility was designed for a horizontal movement fire fighting technique. This method involves moving only those persons who are affected by a situation horizontally (as opposed to through stairwells) until emergency personnel arrive and assume control over the evacuation of the building. This method is recognized by NFiPA and has been successfully employed in penal facilities and high rise structures in other parts of the country. Specifically, this method would transfer individuals from an affected area to an outdoor recreation facility, and then into an adjacent housing unit. Individuals would not be lead into exit stairways unless absolutely necessary. Since each housing unit is separated by two hour fire rated construction and the building is fully equipped with a fire separation system, it was argued that the occupants should be well protected.

Further, the consultant presented calculations to the Board which illustrated that the required means of egress stairways (should they need to be utilized) were well oversized and could easily accommodate the additional occupant load.

The state building inspector testified that he agreed with the Appellant's egress capacity calculations, and that the horizontal movement plan was well thought and organized. However, the inspector reiterated that it was beyond his authority to overturn a decision rendered by a State Board of Appeals. Thus, he was obliged to issue the notice of violation.

Following testimony and review of the evidence, the Board found that the occupancy for the structure was determined solely on the basis of a decision rendered in 1989 by a previous Appeals Board. Evidence presented at that hearing, it appears, was incomplete. The previous Board did not hear any testimony relating to egress capacity or fire evacuation plans. Thus, that Board's determination may have been flawed. The information illustrated at this hearing, the Board continued, greatly clarified the functioning of the facility. With this evidence, the Board found that the building is well equipped to handle the additional occupant load, and that the evacuation plan is well established to assist in the event of an emergency. Thus, the Board unanimously voted to increase the occupancy of the building to the requested 653 inmates.

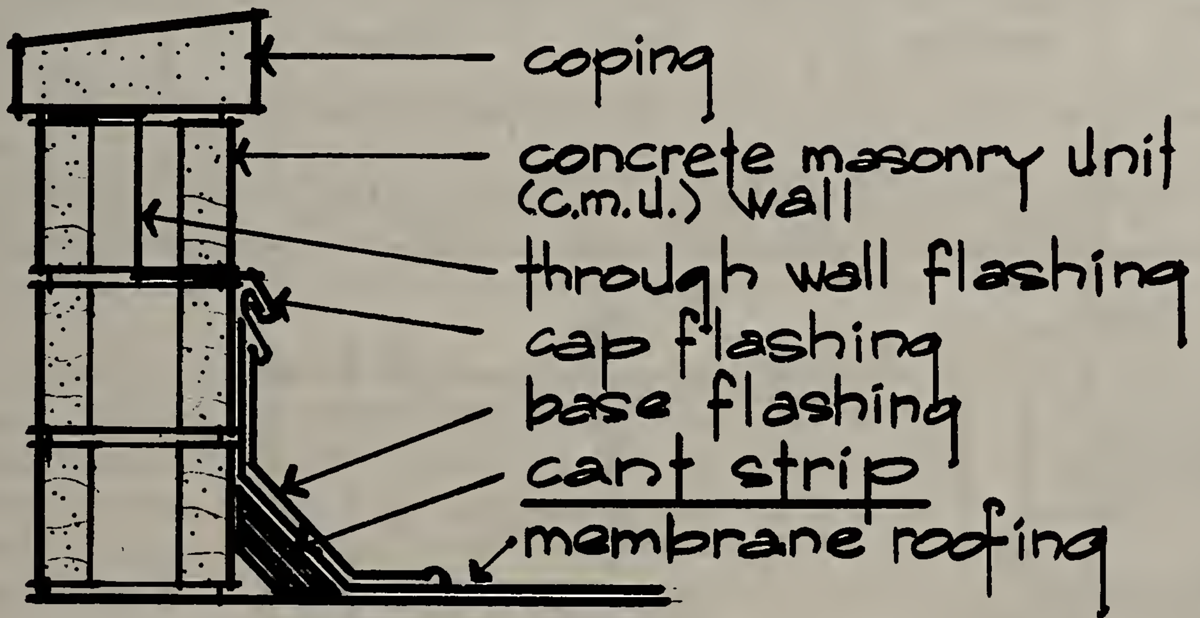
TERMS OF THE TRADE

This issue's Term of the Trade is **cant strip**. According to the Construction Glossary, by J. Stewart Stein, AIA, FCSI, it is:

1.) [A] continuous strip of triangular cross section fitted into the angle formed by a structural deck and a wall or other vertical surface. The 45° slope of the exposed surface of the cant strip provides a gradual transition for base flashing and roofing membrane from a horizontal roof surface to a vertical surface.

2.) [An] impregnated insulation material of wood, impregnated wood, or lightweight concrete (mortar) placed in the right-angle juncture between the (flat) roofing surface and the vertical surface of the adjacent parapet, wall, or roof curb in order to provide a gradual transition from horizontal to vertical application of roofing and base flashing felts. The slope of a cant is usually at 45°.

The cant strip is typical of flat roof construction. In creating an angle at the intersection of a vertical and horizontal plane, one lessens the chance of water penetration. In years past the built-up roof system (a roof that consisted of rigid insulation with a bituminous topping, usually ballasted) employed the cant strip. Today, most flat roofs are topped with a rubber membrane. This membrane seems to prevent water penetration more effectively than the bituminous material, in that it is a more cohesive substance.



detail of cant strip

SUSPENSIONS AND REVOCATIONS

The license of Mr. Ralph D'Amelio (Construction Supervisor License Number 050688) was suspended for a period of one year beginning August 20, 1991 and **ending** August 20, 1992, suspension is over.

Also, as a result of a Hearing on February 21, 1992, the License Review Committee for the Board of Building Regulations and Standards unanimously voted to **revoke** the license of Mr. Raymond M. Romano (Construction Supervisor License Number 054836). The revocation became effective August 25, 1992.

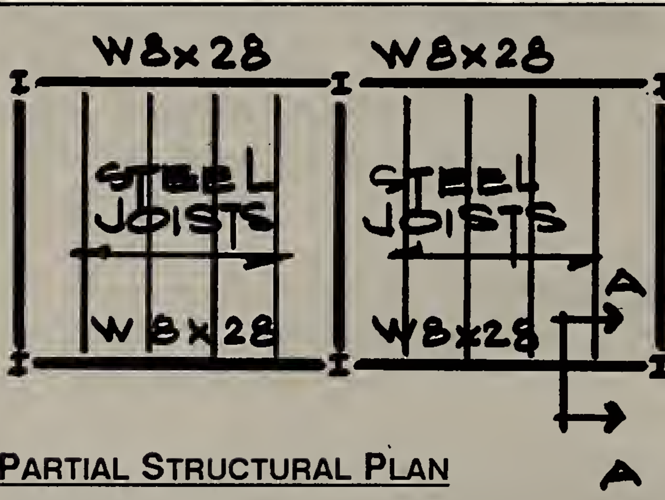
CODEWORD

This issue's **CODEWORD** is W shape. The term refers to a wide flange steel shape ie: a column or beam. For purposes of this article, we will refer to the shape used as a beam. In reviewing a set of structural drawings, an inspector may see reference to a W 8 x 28 or a W 10 x 45. These marks designate a piece of steel of a certain size and weight designed to carry a specific load. On a structural drawing, the beam is shown as a single, heavy line (See Figure A). In section, the beam resembles the letter I (See Figure B), and is sometimes referred to as an I beam. However, the correct terminology is a wide flange steel beam.

Each beam is specifically sized by a registered structural engineer to suit certain design criteria. Selection of the beam is made from the Manual of Steel Construction - Allowable Stress Design, published by the American Institute of Steel Construction. This document is often referred to as the "Steel Manual", and is a vital reference material to all structural engineers.

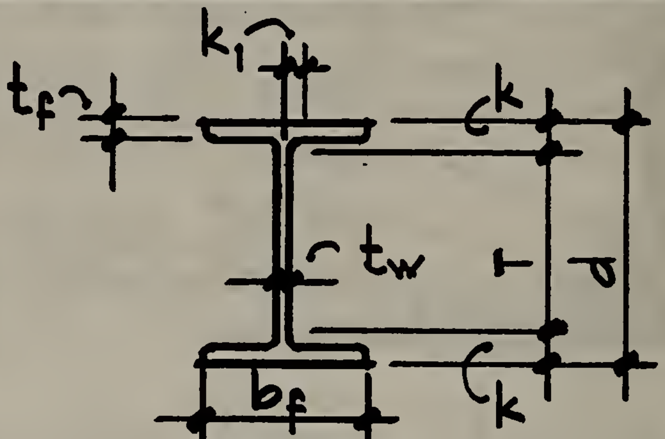
In referencing the "Steel Manual", we see a series of numerical values that may be indiscernible without explanation. A portion of the table relating to a W 8 x 28 is illustrated below (Only that portion of the table relating to W Shape Dimensions is shown. The manual also presents a table relating to W Shape Properties.) The following is an explanation of the meaning of each numeral.

Desig-nation	Area A	Depth d		Web			Flange				Distance		
				Thickness t_w		$\frac{t_w}{2}$	Width b_f		Thickness t_f		T	k	k_1
	In.^{2}	In.		In.		In.	In.		In.		In.	In.	In.
W 8 x 28	8.25	8.06	8	0.285	5/16	3/16	6.535	6 1/2	0.465	7/16	6 1/8	15/16	9/16



PARTIAL STRUCTURAL PLAN

FIGURE A



SECTION A-A

FIGURE B

Symbols

d	depth of section, rounded to the nearest 1/8"
b_f	width of flange, rounded to the nearest 1/8"
t_f, t_w	flange and web thicknesses, rounded to the nearest 1/16"
$t_w/2$	one half the fractional value of the web thickness, rounded up to the nearest 1/16"
T	clear distance on web fillets (radius) rounded down to the nearest 1/8"
k	distance from the outside of the flange to the toe of the fillet on the web rounded to the nearest 1/16"
k_1	distance from the center of the web to the toe of the fillet on the flange rounded up to the nearest 1/16"

CODEWORD - CONTINUE FROM PAGE

The list of symbols on the previous page illustrate the meaning of each portion of the steel section. The only missing information is the meaning of the W 8 x 28 designation itself. The W indicates the wide flange shape. The number eight (8) is the approximate depth of the shape in inches and the number twenty-eight (28) indicates the weight of the beam in pounds per lineal foot. For example, a W 8 x 28 beam, twenty feet in length is a beam that is about eight (8) inches in depth (in height) and its weight is equal to five hundred and sixty (560) pounds (28 lbs./lineal feet x 20 feet = 560 lbs.).

The only exception to this rule is with respect to the W 14 series shapes. If we were to randomly reference one of these shapes in the steel manual chances are the number fourteen (14) would not correspond to the depth of the steel. A W 14 x 233, for instance, measures 16.04" in depth. Why this is so, is a question for greater minds.

SECTION REFERENCES

Part I of Appendix A of the building code lists all reference standards that are mentioned in the base text. The numbers that appear next to the title of the standard refer to sections of the Fifth Edition of the State Building, not to sections of the standard itself.

For example, pages A-14 and A-15 list the pertinent BOCA reference standards. The last listing in this group reads:

NMC-87 National Mechanical Code .... 200.3, 401.4.2, 401.4.3, 600.4, etc.

If we turn to one these sections, we should find that reference is made to this standard. Checking Section 401.4.2, we find the text reads: "Nonmetallic ducts as permitted by the BOCA National Mechanical Code listed in Appendix A." Correctly, the BOCA Mechanical Code is cited.

The idea behind this method was to allow a reader to easily determine were in the code a reference standard is cited. The language of the opening paragraph for the appendix states: "The following is a listing of the standards referenced in this code, the effective date of the standard, the promulgating agency of the standard and the section(s) **of this code** [emphasis added] that refer to the standard. This wording attempted to explain the function of the section reference. However, from the number of phone calls we receive regarding this issue, the language is not quite clear. We hope that this article helps clarify the issue.

NEW CODE AMENDMENTS

Just a reminder to those who may be unaware. A new package of amendments has been issued which effect the Fifth Edition of the State Building Code. These changes reflect the voted actions of the Board on proposals presented at the November, 1990, May, 1991, and November 1991 Public Hearings. Many of the changes are editorial, correcting errors that where made in transcribing from the Fourth Edition of the code. The most significant revision in the set is found in Section 113.8 entitled Independent structural engineering review. This section is new to the code and stems from a proposal presented by the Boston Association of Structural Engineers . Independent review requires additional engineering services be performed on certain types of structures. Items one (1) through four (4) under Section 113.8 list these structures. As a result of this change to the code, additional code sections needed to be created. Therefore, Section 131.0 entitled Structural Peer Review Advisory Board, and Appendix I entitled Independent Structural Engineering Peer Review were added to the code in order to set criteria for the review process. Please refer to the cited sections of the code for further details.

WORKERS COMPENSATION - UPDATE

The March 1992 issue of **CODEWORD** contained an article entitled, Regarding Workers' Compensation Insurance. The article made reference to Massachusetts General Law c 152 § 25C. This section of law (on the books since 1987) states that any state or local licensing agency shall withhold the issuance of or renewal of a license or permit to operate a business or to construct buildings in the Commonwealth **unless** the applicant provides acceptable evidence that he has properly complied with the workers compensation insurance requirements.

Also, the article suggests that a building official should require a permit applicant to sign an affidavit indicating compliance with this law. The affidavit was to be produced by the Office of Industrial Accidents. Finally, this document has become available. A copy is attached to the back of this document for your convenience. Please make the number of copies necessary to supply your office from this sheet.

It may be wise to review the March article and read the law in order to become more familiar with the process. Please remember that there is a hot line established by the Office of Industrial Accidents where a building official can quickly verify whether or not an individual or company is adequately insured and whether or not his policy is current. The number to call is (617) 727-4900, extensions 401 through 405.

UPDATE ON CERTIFICATION

As reported in the March 1992 issue of **CODEWORD**, Senate Bill #1431 relating to the "grandfathering" of all currently employed, qualified individuals into their positions as building officials was heard before the Committee on Local Affairs on March 24, 1992. Members of the staff of the Board of Building Regulations and Standards (BBRS) as well as representatives from all three building official associations attended the hearing. All testimony was favorable, and the Committee also gave the bill a favorable review.

The bill worked its way through both branches of the Legislature (Senate and House), receiving only a minor amendment during the third House reading. The amendment was with respect to order of text, not content. Finally, on August 14, 1992 at 4:30 pm, the governor signed the bill into law. The legislation is now known as Chapter 168 of the Acts of 1992. Since the legislation does not contain an effective date in its language, it will become effective ninety (90) days after its signing, which is November 12, 1992.

The language of the law reads, in part: "Notwithstanding the provisions of any general or special law, rule or regulation, ordinance or by-law to the contrary, all full or part-time inspectors of buildings, building commissioners, and local inspectors **duly appointed and in office on the effective date of this act and meeting the minimum requirements of section three of chapter one hundred and forty-three** [emphasis added] of the General laws for his position shall be deemed qualified and certified in the position held on said date . . .". The law continues to state that " . . . satisfactory evidence of such appointment [shall be] furnished to the board [BBRS] by a city or town clerk".

The highlighted section above indicates that it is **imperative** that each city and town provide acceptable evidence to the Board illustrating that its building official is in office on the effective date of legislation, **November 12, 1992**, and is (and was) qualified to hold such position. Currently, the Board requires that each city and town provide a list of its employed building officials as part of its annual proceedings. As of the end of the last fiscal year (June 30, 1992), the Board has received information in this regard from most every community. However, the Board will need to provided "satisfactory evidence" that this list remains true on the effective date of the law. Therefore, in the weeks ahead, the Board will forward a letter to each city and town requesting that proper verification be supplied.

CERTIFICATION - CONTINUED

It is the responsibility of each building official to ensure that this evidence is presented to the Board. The cut-off date for receiving this information is **November 30, 1992**. So, please make a note of this very important date, and please submit the documentation in a timely manner.

We will provide further reminders in future issues of **CODEWORD**, but remember, the responsibility is your own.

MORE ON CERTIFICATION

As many are probably aware, the certification of building officials in the Commonwealth has been an ambition of the BBRS for many years. The road was long, but the results are finally here. The members of the Certification Committee that assisted in this task are to be commended for their work. This body was comprised of a cross section of building officials throughout the state. Its charge was to develop the standards by which inspectors were to be judged as properly certified and to make recommendations to the Board as to the daily operation of the certification process.

As part of its recommendations, the committee called for the formation of a new Standing Certification Committee. This committee would oversee the initial process of certification, maintain records of certified inspectors, hear complaints and appeals pertaining to certification and review and approve courses of study for follow-up educational requirements.

The make-up of the new nine-member committee is as follows:

- One (1) member of the Board of Building Regulations and Standards or his designee,
- Six (6) members who are building officials:
    - One (1) member from each of the three (3) Municipal Building Official's Associations, and
    - **Three (3) members at large to be appointed by the Board**,
- One (1) member from academia who is an educator of construction at the college level (ie: architectural, civil, structural) to be appointed by the Board,
- One (1) member from the Massachusetts Municipal Association.

The Board has sent letters to each of the three building official's associations and the Mass. Municipal Association, requesting their assistance in establishing the committee. However, the Board needs to petition the building official's community in order to fill the remaining "at large" positions shown highlighted above.

Anyone who is employed as a building official, whether affiliated with one of the associations or not, may submit his/her name to the Board for consideration **no later than October 30, 1992** @:

The Board of Building Regulations and Standards
One Ashburton Place, Room 1301
McCormack State Office Building
Boston, MA 02108
Attention: Professor Kentaro Tsutsumi, Chairman

APPLYING THE CODE TO SMALL STRUCTURES

This article first appeared in the March, 1989 issue of **CODEWORD**, but it is time to run it again.

The State Building Code regulations encompass an abundance of different types of buildings and structures. High rise buildings, backyard tool sheds, stadiums, tents, shopping malls, swimming pools, theaters, grain elevators and service stations are just some examples of the diverse kinds of structures which are subject to the building code. It is fairly obvious that, while there may be some similarities between those widely varying structures, there are many ways in which portions of the code are inapplicable or inappropriate for some of these structures. Just to cite a few examples:

- How would you provide exit doors from a swimming pool?
- Are two means of egress really necessary from a tool shed?
- How do you insulate a tent to satisfy the energy code?

While these examples may seem particularly ridiculous, there are situations which can puzzle the most experienced code official. In some cases, the building code makes explicit provision for unique situations encountered with special structures through the insertion of special use and occupancy provisions, which are contained in Article 6 of our State Building Code. In other situations, the code may reference standards of accepted engineering practice, which are applied in addition to code requirements. However, when dealing with small structures such as sheds, playhouses, gazebos or decks, there is another approach which should be used. The building code, under Section 311, contains a classification called Use Group U, Utility and Miscellaneous Uses, intended to encompass accessory buildings and structures such as those described above. Section 311 gives the building official discretionary power to apply those portions of the building code which are commensurate with the "fire and life hazard incidental" to the use of such structures. This discretionary power, wisely applied by the building official, allows the application of only those code requirements necessary for safe construction and use of a structure, and avoids costly, and unnecessary requirements such as footings and secondary means of egress for tool sheds.

BACKFILLING OF FOUNDATION WALLS

This article, too, first appeared in the March, 1989 issue of **CODEWORD**. Since it is an issue close to the heart of all building officials, we thought we should run it again.

The foundation season brings the need for caution and proper procedures with respect to the backfilling of foundation walls. Table 3402-1 lists the maximum height of unbalanced fill permitted for unreinforced masonry and concrete foundation walls. This Table is based on the assumption that the wall will carry the lateral soil pressure in bending in the vertical direction; generally the shortest and strongest span. In order for this assumption to be valid, the wall must be supported at the top and bottom prior to placement of the backfill.

The top of the wall should be supported by temporary bracing, or the first floor framing should be in place prior to backfilling to provide lateral support at the top of the wall. Lateral support at the bottom may be provided by keying the wall to the footing, dowels connecting the footing and the wall, the placement of the basement slab or temporary bracing. Lack of such bracing is often the cause of dangerous foundation wall failure. It is, therefore, critically important that during the foundation season the building official emphasize to foundation contractors the importance of adequate bracing prior to backfilling.

. J Campbell
mmissioner

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF INDUSTRIAL ACCIDENTS
600 WASHINGTON STREET
BOSTON, MASSACHUSETTS 02111

WORKERS' COMPENSATION INSURANCE AFFIDAVIT

____
(licensee/permittee)

ith a principal place of business/residence at:

____
(City/State/Zip)

o hereby certify, under the pains and penalties of perjury, that:

] I am an employer providing the following workers' compensation coverage for my employees working on this b.

______________________________ ______________________________
nsurance Company Policy Number

] I am a sole proprietor and have no one working for me.

] I am a sole proprietor, general contractor or homeowner (circle one) and have hired the contractors listed below ho have the following workers' compensation insurance policies:

______________________________ ______________________________
ame of Contractor Insurance Company/Policy Number

______________________________ ______________________________
ame of Contractor Insurance Company/Policy Number

______________________________ ______________________________
ame of Contractor Insurance Company/Policy Number

| I am a homeowner performing all the work myself.

NOTE: Please be aware that while homeowners who employ persons to do maintenance, construction or repair work on a welling of not more than three units in which the homeowner also resides or on the grounds appurtenant thereto are not generally onsidered to be employers under the Workers' Compensation Act (GL. C. 152, sect. 1(5)), application by a homeowner for a license r permit may evidence the legal status of an employer under the Workers' Compensation Act.

understand that a copy of this statement will be forwarded to the Department of Industrial Accidents' Office of Insurance for coverage erification and that failure to secure coverage as required under Section 25A of MGL 152 can lead to the imposition of criminal penalties onsisting of a fine of up to $1500.00 and/or imprisonment of up to one year and civil penalties in the form of a Stop Work Order and a ne of $100.00 a day against me.

igned this ______________________ day of ______________________, 19 ____________

______________________________ ______________________________
icensee/Permittee Licensor/Permittor

CORRECTION

Recently each building official received a copy of the *Approved Manufacturers & Third Party Inspection Agencies* with respect to the Commonwealth's manufactured building program. The expiration date for the list is April 30, 1993. Two corrections must be made to this list.

First, Chelsea Homes was inadvertently omitted from the list. Please be aware that Chelsea Homes, Inc. P.O. Box 599 Malboro, NY, 12542 is an approved agency (Mfg. No. 119, TPIA 03, Unit Code B).

Also, Excel Home's Liverpool, PA plant is the only manufacturing facility currently listed and approved for Excel.

DO I NEED A PERMIT FOR THAT?

We have received many inquiries as to whether or not a building permit is necessary to install vinyl siding (or other resilient sidings) and to install fiberglass based roof shingles. The answer to both is of these questions is, yes. Each of these products are controlled under the building code in terms of attachment (nailing schedules, etc.). Also, the code dictates number of layers allowed for roof shingles. However, a construction supervisor's license (CSL) is not necessarily needed to perform this work. Remember, the basis for requiring a CSL is related to structural work. For example, if one were to encounter rotted roof sheathing and rafters when performing an otherwise simple roofing job, a license is required. The reason is that one needs to understand building code provisions relating to rafter size and spacing, sheathing thickness and nailing requirements, etc, in order to properly repair the rotted sections.

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Contributing Staff: *Brian Gore, Peter Goodale*

The Board of Building Regulations and Standards
One Ashburton Place - Room 1301
Boston, MA 02108

MASS. BRS1,3:992/Dec

The Commonwealth of Massachusetts

STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

CODEWORD

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WILLIAM F. WELD
Governor

HOMAS C. RAPONE
Secretary

December, 1992

Thomas L. Rogers
Administrator

CERTIFICATION - A REALITY !

The October, 1987 issue of **CODEWORD** ran a front page article titled: *A Safe Investment*. The subject of the article was investment in thyself. For a building official, the article stated, the best investment is certification. Certification it explains, conveys professionalism to the field of endeavor, and professionalism, according to the American Heritage Dictionary, describes "one who has an assured competence in a particular field or occupation". The key words in this definition, the article continues, are *"assured competence"*. To assure something, is to certify it. Therefore, certification is something every competent building official should strive for.

That was 1987. Today, the wait is over. As most of you are aware, November 12, 1992, was the date that Chapter 168 of the Acts of 1992 became effective. This Act amended Massachusetts General Law (MGL) c 143 § 3. It created the requirements for certifying building officials within the Commonwealth, and surely, it marks the beginning of a new era in code enforcement. After many years of struggle, certification is now a reality, not just a goal. And, as illustrated above, with certification comes a pride and confidence in one's self.

A Safe Investment was written over five years ago, but the concept of certifying building officials has been around much longer. In fact, if one were to track previous publications of **CODEWORD**, he would find that a good percentage carried some information with respect to certification. So, it is no surprise that the Board of Building Regulations and Standards has long advocated certification. But, the Board itself could not have implemented the requirements for certification without the hard work and dedication of a particular group of individuals. This group, known as the ***Original Certification Committee***, was created by the Board to study methods and develop recommendations for the certification of building officials within the Commonwealth. After much effort, the group completed its task in mid 1991 (specifics of which are discussed in the coming articles). At this time, the Board would like to identify each member of this committee and commend him for his work. The make up of the ***Original Certification Committee*** is:

- Bruce Austin, Building Inspector, Town of Greenfield
- Robert Betit, Inspector of Buildings, Town of Dalton
- Francis Calnan, Building Inspector, City of Lynn
- Steve Crawford, Building Inspector, Town of West Bridgewater
- William Gedraitis, Inspector of Buildings, Town of Middleborough
- John Grover (Former Chairman) Inspector of Buildings (soon to be retired), Town of Norwood
- Frank Magliano, Building Commissioner (retired), City of Brockton
- Matthias Mulvey (Chairman) Inspector of Buildings, City of Quincy
- Paul Nonni (Vice Chairman) Building Inspector, City of Somerville
- Bradford Nyhan, Former Building Inspector, Town of Concord (now living in Florida)
- Dan O'Sullivan, Building Inspector, City of Springfield
- Bart Thomas, Building Commissioner, Town of Holyoke
- David Thyng, Inspector of Buildings, Town of Brewster
- Don York, Building Inspector, Town of Holyoke

CERTIFICATION - CONTINUED

Some of the members of the ***Original Certification Committee*** have moved on to other areas of the country to pursue new career goals. Others have (or are considering) retirement. Regardless of where he is at this point in time, each member of this committee deserves commendation for his work and dedication to this cause.

THE MECHANICS OF CERTIFICATION

One of the goals of the *Original Certification Committee* was to establish legislation that would enable the "grandfathering" of all those who were employed as and qualified as a building official. As stated in the opening article, this legislation was passed and became effective on November 12, 1992. Following the passage of the legislation, the staff to the Board was responsible for acquiring an accurate list of all those who were employed as a building official on the effective date of legislation. Therefore on (or about) November 9th of this year, each city and town **clerk** received a form that listed the names of each building commissioner/inspector of buildings and/or local building inspector employed by his/her community. This list reflected the latest record of names available to the Board of Building Regulations and Standards. The clerk along with the appointing authority for each community simply needed to sign the form in recognition that the information shown was correct, or make the necessary corrections, and return the information to the Board's office.

With this data, the Board could then forward a certificate to each building official indicating that he is now considered a duly certified building official in accordance with the provisions of Massachusetts General Law c 168 of the Acts of 1992. Along with the certificate, each official will receive wallet sized identification card that should be carried on his/her person at all times.

It is important to note that a building official may not have seen the form sent by the Board, since it was sent to the office of the clerk, not to the office of the building official. Therefore, there is no need to panic if you (the building official) do not recall seeing the form. However, the building official should take care to ensure that his clerk has properly replied to this Board. In an effort to assist in this regard, the following is a list of those communities who had not responded to the Board's request as of December 16, 1992.

- Abington
- Acushnet
- Ashby
- Ashfield
- Attleboro
- Avon
- Bedford
- Belmont
- Blackstone
- Bridgewater
- Brookfield
- Cambridge
- Charlemont
- Chelmsford
- Chelsea
- Clinton
- Colrain
- Cummington
- Erving
- Fairhaven
- Florida
- Georgetown
- Glouster
- Gosnold
- Grafton
- Granville
- Greenfield
- Groveland
- G. Barrington
- Hardwick
- Hawley
- Hingham
- Heath
- Huntington
- Ipswich
- Leyden
- Longmeadow
- Lowell
- Lunenberg
- Manchester
- Millville
- Monroe
- Monterey
- Montgomery
- Mt. Washington
- Northbridge
- N. Dartmouth
- Quincy
- Savoy
- Shutesbury
- Stoneham
- Sunderland
- Swansea
- Tolland
- Wales
- Ware
- Webster
- Wendell
- Westminster
- Weymouth
- Whitinsville
- Woburn
- Worcester

If a building official sees his/her city or town listed above, please contact your clerk to determine what is causing the delay. The Board has extended the deadline for receipt of this information until **January 29, 1993**. After this date, anyone who wishes to be considered "grandfathered" into the certification program will need to state his case before the Board.

FURTHER TO - CERTIFICATION

The Original Certification Committee was charged with a number of tasks. The first (the "grandfathering" process), we have addressed above. The main purpose of the Committee, however, was to develop a workable program for certifying building officials. Presently, staff to the Board of Building Regulations and Standards is working on regulations to govern the certification process based on the recommendations of the *Original Certification Committee*. The main points of the regulations are to define the required examinations that one now needs to take in order to **become** certified as a building official in the Commonwealth, as well the requirements for follow-up education that one needs to satisfy in order to maintain his/her certification.

The required examinations are as follows:

Examination required for certification as a local inspector (as defined in MGL c 143 § 3):

- The Building Officials and Code Administrators, International (BOCA) **Building Inspector** examination, **or**
- The BOCA **Plan Reviewer** Examination.

Examination required for certification as a building commissioner/inspector of buildings (MGL c 143 § 3):

- The BOCA **Building Inspector** examination, **or**
- The BOCA **Plan Reviewer** examination, **and**
- The CABO **Administrators** examination.

These examinations are generally offered twice each year by the BOCA and CABO organizations, and consist of varied parts, testing ones knowledge and familiarity of the building code and associated regulatory documents. Of course, only those who have not been "grandfathered" into the program will need to be tested. However, if one is now certified or becomes certified as a local inspector and wishes to gain certification as a building commissioner or inspector of buildings he/she will need to successfully take the CABO Administrators examination.

Regardless of whether or not certification has been achieved through examination or through the "granfathering process, all who wish to maintain his/her certification must complete forty-five (45) hours of acceptable educational credit per each three (3) year period during the life of his/her certification. Some things that would be considered acceptable are; continuing education courses offered by the BOCA organization, courses or seminars offered by the Commonwealth as well as meetings of the various building official organizations that deal with building code or related regulation matters.
The above is not an exhaustive list of acceptable credit items. Courses offered by community colleges or by BOCA, through their continuing education process have an inherent credit value assigned to them. However, knowledge gained through association meetings or district meetings are less definable. However, most likely, these meetings will also count towards continuing education credit. (Look for specifics regarding this topic in upcoming issues of **CODEWORD**.)

Realizing that certification will require close scrutiny and maintenance, the original certification committee recommended the creation of a *Standing Certification Committee*. The purpose of this committee is to oversee the certification process, and address problems that may arise as the process matures. For instance, an individual may have been employed as a building official for a number of years, but due to circumstances beyond his control (layoff), he was not in office on the effective date of legislation (November 12, 1992). This person **may** still be entitled to take advantage of the "grandfathering" process (dependent upon the situation). This is just one example of the types of issues the with which the *Standing Certification Committee* would be interested. There are a number of scenarios that may warrant review before this committee. If someone feels he/she has standing before the committee, he/she should forward a letter describing his qualifications and circumstances to:

the Standing Certification Committee, c/o Rob Anderson
Board of Building Regulations and Standards
One Ashburton Place - Room 1301
Boston, MA 02108-1618

Each request will be examined and, if deserving, a hearing will be conducted before the committee to explore the facts. The Board of Building Regulations and Standards will have ultimate and binding authority in these matters.

Further facts regarding certification will be provided in upcoming issues of **CODEWORD**. For now, we will close with these final points.

The *Standing Certification Committee* has been voted and approved by the Board and will be active shortly. The make-up of this committee will be identified in the next issue of **CODEWORD**. The finer points of the process are being worked out, and the regulations are underway. Before all is finalized, there are likely to be questions. If so, do not hesitate to call the office at the number shown on the cover sheet for assistance.

NEW BUILDING CODE APPEALS FORM

The Board is pleased to announce that it has revised its *Building Code Appeals Application*. A copy of the new form is attached to this publication. The new form was modeled after a building permit application. The form requires one to identify the use group classification, type of construction, and whether the building is new or existing, as well as other general information regarding the make-up of the building and the nature of the appeal. The new form will help Board members get acquainted with the overall building and the reason for appeal. Also, it will force the appellant to think about the matter, in the hope that he/she will be better prepared to address the appeal before the Board.

This document supersedes all other appeals forms. Please ensure that all other forms are discarded. And, please make copies of the revised form available at your office.

RETIREMENTS

It is always difficult to announce the retirements of those whom you have worked with over the years. However, it is also pleasant to ponder the lifestyle that these individuals will now be able to lead.

First, we must announce that Mr. John Grover, Inspector of Buildings for the town of Norwood, has submitted paperwork relating to his retirement, that will become effective early 1993. Along with performing his duties within the town, John was a member of the Board of Building Regulations and Standards, representing town building officials throughout the Commonwealth. John's hard work and dedication was portrayed in his efforts with the *Building Code Appeals Board*, the *Fire Protection, Fire Prevention Board*, and the *Original Certification Committee*. John's thoughtful and professional manner will be missed. However, John probably will not miss his work. Now he will be able to concentrate on his passion; fishing.

Second, Mr. Jim Hallisey, Fire Chief from the City of Brockton, has also submitted his retirement papers to the city, effective January 2, 1993. Jim also served on the Board of Building Regulations and Standards, representing the fire services of the Commonwealth and served on the *Building Code Appeals Board* as well as other varied committees as the need arose. Jim's honesty and integrity was apparent in his every word and action. His work on the board was thoughtful and thorough. But, unlike John, Jim has decided that he has a little more work to do before settling down. Therefore, he has accepted a position with the Massachusetts Fire Chiefs Association.

Both John and Jim will be dearly missed around our office. But we know each looks forward to the next stage of life, and we wish each much success in all future endeavors.

CONSTRUCTION SUPERVISOR LICENSE - SUSPENSION & REVOCATION

On November 4, 1992, the License Review Committee for the State Board of Building Regulations and Standards voted unanimously to revoke the Construction Supervisor's License of Mr. Andris H. Perekrests, License Number 046399, effective immediately.

CODEWORD

his issue's **CODEWORD** is corner bracing. The purpose of corner bracing in wood frame construction is to tabilize the frame against lateral displacement. However, considering today's construction methods, is this equirement antiquated code language?

ection 3403.2.3 of the Fifth Edition of the building code states that "Exterior walls of wood frame residential uildings shall be constructed in accordance with Figures 3403-1 and 3403-2, and Tables 3403-2 and 3403-3". igure 3403-1 is an isometric view of a corner of a wood frame house. It illustrates the construction of a platform ramed wood structure. From this figure, we reference specific details of the construction in Figure 3403-3. This igure, part of which is shown below, depicts three framing conditions that would corner bracing. The first shows frame wall without any openings at the corner. The second and third figures show frame walls with window penings at or near the corner. In each condition, corner bracing of least 1" x 4" wood stock set at a forty-five egree (45°) angle are applied. Alternatively, metal "T" straps may be applied.

one were to stop reading after discovering the size and material to be used in bracing the corners of a wood rame house, he would be unaware of one important fact. That is, corner bracing is **not** required when plywood r composite sheathing is employed, regardless of whether it is set vertically or horizontally. Inevitably, one of hese two materials is used in today's new home construction, so the language may appear somewhat obsolete. owever, there are an abundance of older homes that were constructed with variously sized pine boards (or other ype of wood boards) used as a sheathing material. Many of these homes will undergo renovations at some point time. In doing so, some may choose to remove the old lath and plaster walls and replace this system with ontemporary construction (gypsum wall board). Depending on the framing condition of the wall, one may then eed to install corner bracing (in accordance with the provisions of Article 32) before enclosing the space. herefore, the language remains pertinent, even today.

ne final point. Irrespective of the type material one is installing; whether wall sheathing, roof sheathing or floor oists, a building official should always take care to check the fastener schedules contained within Article 34 to nsure that the materials have been properly secured. Without the correct fastenings, materials may not behave the manner that was intended.

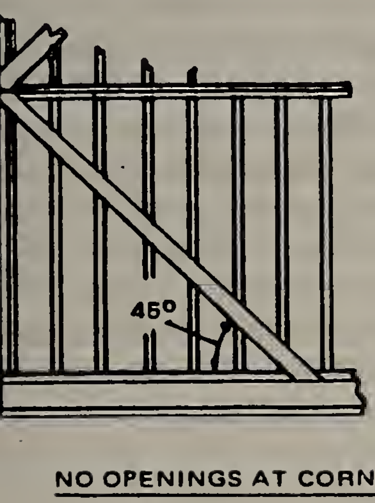

FIGURE 1

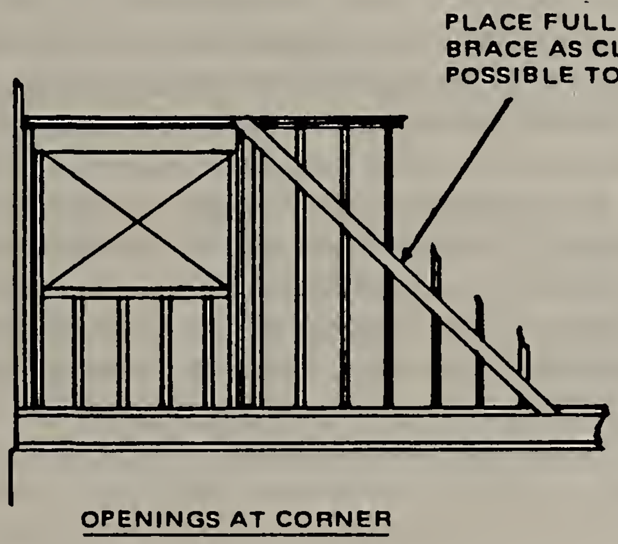

FIGURE 2

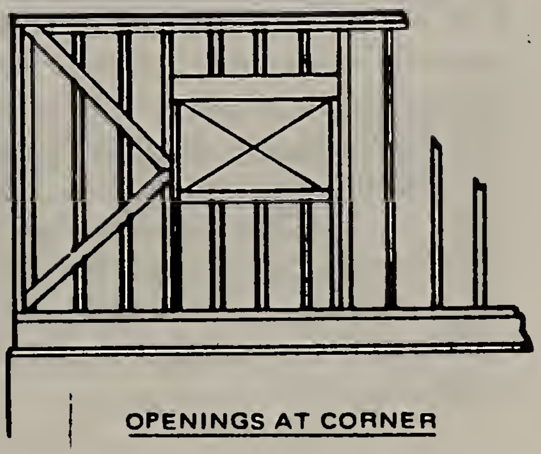

FIGURE 3

CORNER BRACING REQUIRED
Min. 1" x 4" @ 45° angle or
Metal "T" Strips

NOT REQUIRED With 4' x 8'
Plywood or Composition Sheathing
Applied horizontally or vertically

PELLET STOVES

ust a reminder. The December, 1991 issue of **CODEWORD** introduced an affidavit process with respect to the nstallation of pellet stoves. This process remains valid today and until further notice. Each building official should ake care to examine the **CODEWORD** article to re-familiarize himself with the procedure governing the use of ellet stoves in the Commonwealth.

STOP WORK ORDERS

Section 122.1 of the building code addresses *Stop Work Orders*. This order is a powerful tool of code enforcement and should not be misused. The language of this section clearly states its purpose; it reads: "Upon notice from the building official that any work is being prosecuted contrary to the provisions of this code or in an unsafe or dangerous manner, such work shall be immediately stopped". Since the building code deals almost exclusively in life safety issues, one could argue that any violation of its provisions would result in a dangerous situation, and therefore, should be stopped. However, it is incumbent upon the building official to determine if the situation warrants a stop work order or whether some other action may be pursued.

In most instances a building official does not have much difficulty evaluating the urgency of a matter, so the decision of issuing a stop work order comes fairly easily. However, some difficulty seems to arise with respect to the manner in which the notice of a stop work order is served. Consequently, this article will examine the language of both the law and regulation governing the procedure relating to stop work orders.

Key language appears in the remaining portion of Section 122.1 which states that ". . . The stop work order shall be **in writing** [emphasis added] and shall be served on the owner or on the person doing the work . . . ". Probably the most important part of this section are the words that follow; ". . . and [the stop work order] **shall state the conditions under which work may be resumed** . . ." [emphasis added].

Since stop work orders often deal with sensitive matters, and may ultimately lead to court action, the building official should take care to ensure that the order has been issued correctly. Although, the final language of Section 122.1 affords the building official the ability to issue the order verbally, when he feels immediate action is necessary. Nonetheless, it also requires the order to be followed **in writing within forty-eight (48) hours**. Regardless of the relationship that may exist between the parties involved in this process, written notice should be standard procedure. In this notice, the code requires a building official to state the conditions under which work may be resumed. This is not meant to require him to **design** the solution for the problem. Rather, it is meant to identify the problem; ie: construction began without benefit of building a building permit, and the condition that will resolve the problem; ie: apply for and receive a building permit. With this, the owner is given notice of the violation, and is also guided as to the proper corrective action so he is not left fumbling for a solution.

Even when the procedure for issuing a stop work has been precisely followed, there will be occasions when the notice will go unheeded. This, may cause a building official to take legal action. In doing so, the building official acts under the provisions of Massachusetts General Law c 143 § 51, entitled *Liability for violation of statutes; criminal prosecution; notice to firm or corporation*. This section enables the building official to seek prosecution when a notice is ignored. However, it is important to note that this section, too, requires remedial action to be stated **prior to seeking punitive measures**. The section states that ". . . No criminal prosecution for such violation [such as the violation cited above] shall beg[i]n until the lapse of thirty days after such party in control has been notified **in writing** [emphasis added] by a local inspector as to what changes are necessary to meet the requirements of such notice". The language of the law is similar to that of the building code. Both emphasis the need to issue notice in writing and to present the remedial action required of the violator. Without proper notification, the building official will likely be back at square one; faced with a dangerous situation without a solution at hand.

WHAT "KIND OF" FOAM IS THAT, AND WHERE IS IT BEING USED?

Section 3420.3 relates general requirements for the use of foam plastics in one and two-family dwellings. Similarly, Section 2002 of the main body of the Code (Basic Code), sets general requirements for the use of foam plastics.

Whenever foam plastics are to be utilized in buildings, the Building Official has the right to ask to see the ASTM E84 "flame spread" and "smoke-developed" data, if applicable. Additionally, the Code generally, but not always, requires foam plastics to be separated from habitable space via an approved thermal barrier. When encountering these products, the Building Official should look to see what type of separation is being proposed/provided, and reference the cited sections to ensure conditions of the code are met.

CONTROLLING CONSTRUCTION

Section 127.0 of the code governs construction control in the Commonwealth. This provision is meant to ensure that a registered professional is charged with projects that are considered complicated in terms of construction methods and code compliance. It is clear that the requirements of Section 127 are invoked when one is designing and erecting a new building encompassing thirty-five thousand cubic feet of enclosed space or greater. But, a nagging question remains in terms of renovating small spaces within large buildings. Specifically, the question most often asked is: if an individual renovates a portion of an existing building, and that portion is comprised of less than thirty-five thousand cubic feet of enclosed space, but the total building is greater in size (ie: larger than thirty-five thousand cubic feet), does the renovation fall under the provisions of Section 127, Construction Control?

The simple answer to this question is, yes. In explanation, Section 127 of the Fifth Edition of the State Building Code states that a registered professional architect or engineer is required to control (monitor) job progress for all buildings and structures unless such buildings or structures are excepted from the requirement under the provisions of Section 127.1. The first exception under this section states that; "Any building less than thirty-five thousand (35,000) cubic feet of enclosed space. . ." does **not** require the services of a registered professional architect or engineer. The thirty-five thousand (35,000) cubic feet figure is excerpted from the registration laws governing the practice of architecture. It is also the figure used to establish the threshold in the licensing of construction supervisors in the Commonwealth. Notice, however, that the word **building** is used in the exception, and that it is not followed by the term; or parts thereof. It seems clear that the intent of this language is to exempt only those **buildings** that meet the provisions of the exception, not portions of buildings.

The real question, then, is; why? At first glance it may seem unreasonable to require the services of a registered professional when dealing with small renovation projects within larger buildings. However, if one stops to think of the complexity of a large building, things begin to become clear. For instance, if someone wished to erect a series of new offices within an existing space of a high rise building, he may be faced with a number of uncooperative building systems. The sprinkler system, as one example, would likely need to be reconfigured in order to properly serve the new offices. If the sprinkler heads were not realigned properly (in accordance with NFiPA 13), the system may be rendered ineffective. The same would hold true for the public address system (fire announcement warning system) and for the required paths of egress. In fact, this scenario could be repeated with any number of building systems, from smoke detection to lighting to HVAC systems. Therefore, a registered professional, who is educated in such matters, must design the space and coordinate the associated building systems and must monitor ongoing construction.

A second reason that the code requires construction control over such situations concerns handicapped accessibility. The Rules and Regulations of the Architectural Access Board (AAB Regulations) are promulgated with the intent of providing physically handicapped persons with " . . . full and free use of all buildings and facilities so that all such persons may have the educational, employment, living and recreational opportunities . . ." that are available to all other citizens. Section 3 of these regulations is entitled, Buildings Under Jurisdiction. This section states that: "All construction, **reconstruction**, **alteration**, **remodeling** [emphasis added] and change of use of public buildings or other facilities open to the public shall conform to these (AAB) regulations". The section continues to list a number of methods by which one would invoke accessibility requirements. In a renovation project, an individual could very well trip these provisions, knowingly or unknowingly, and the scope and cost of the project could be drastically altered.

Part of the responsibility of a registered architect or engineer is to keep abreast of the regulations and building standards (such as NFiPA standards) that affect building construction and, consequently, his profession. These professionals are also expected to understand entire building systems, not just certain aspects of a building. Therefore, the building code relies upon the expertise of these individuals in designing (and constructing) large buildings, and spaces within large buildings. To allow an individual who is less familiar with these issues, could lead to disaster.

CONCRETE TESTING LABORATORIES LICENSED TO OPERATE IN THE COMMONWEALTH
(As of December 17, 1992)

Allied Testing Labs, Inc. 115 St. George Rd. Springfield, MA	The Haller Testing Labs of MA 11A Walkup Drive Westborough, MA	Miller Engineering & Testing, Inc. 100 Sheffield Rd. Manchester, NH	Tibbetts Engineering Corp. 716 County St. Taunton, MA
American Engineering & Testing 14 Roc Sam Park Rd. Braintree, MA	Holmes & Geisser 120 Pershing St. E. Providence, RI	PSI-CWB Assoc. Division 427 Turnpike St. Canton, MA	Trow-Protze Consulting Engineering 70 Jaconnet St. Newton Highlands, MA
Boston Testing Inc. 1831 Broadway Saugus, MA	R. J. Kenney Assoc., Inc. 72 Washington St. Plainville, MA	PSI, Inc. 12 Ashmont Ave. Worcester, MA	UTS of Mass. Inc. 5 Richardson Lane Stoneham, MA
Briggs Assoc., Inc. 400 Hingham St. Rockland, MA	MBTA Mtls. Testing Lab. 170 Freeport St. Dorchester, MA	Rosenfeld Concrete Corp., Testing Lab. 75 Plain St. Hopedale, MA	Yankee Engineering & Testing, Inc. 10 Mason St. Worcester, MA
Briggs Assoc., Inc. Deer Island Boston, MA	MDC Mtls. Field Lab. 148 Newton St. Waltham, MA	Soil & Material Testing Inc. 57 S. Main St. Castleton, NY	
CA/T Construction Materials Testing Laboratory Harding Building, 335 "B" Street Extension Boston, MA	Massport Auth. Mtls. Lab. 239 Prescott St. E. Boston, MA	The Thompson & Lichtner Co., Inc. 11 First St. Cambridge, MA	

NOTE: Enforcement of regulations relating to Concrete Testing Laboratories licensed in the Commonwealth:

1.) Only the laboratories, at the specific addresses, listed above, are currently considered certified in Massachusetts. Please pay particular attention, not only to the laboratory name, but also, to the laboratory address!

2.) Concrete Testing Laboratories licensed within the Commonwealth are governed by the provisions of 780-CMR-1, entitled: *CONCRETE TESTING LABORATORIES LICENSING RULES AND REGULATIONS*. These regulations are found at the back of the Fifth Edition of the State Building Code. Personnel conducting tests of concrete in these labs must possess a valid Class "A" Field Concrete Technicians License, and are bound by the provisions 780-CMR-2, entitled: *CONCRETE TESTING PERSONNEL LICENSING RULES AND REGULATIONS*, also found at the back of the code. Further to these regulations, Section 127 (Controlled Construction) requires licensing of laboratory facilities and personnel. Therefore, when dealing with projects subject to the provisions of Controlled Construction, the Building Official has the right to request the Class "A" license numbers and license expiration dates of all those involved in concrete testing procedures.

3.) Concrete test cylinders made in the field are typically **6" x 12" cylinders** (6" diameter mold by 12" high). Often, Concrete Testing Laboratories will make 4" x 8" test cylinders. These cylinders are **only** allowed when **explicitly specified in the project specifications**. Otherwise, they are not allowed. If the Building Official encounters cylinder sizes different from the required 6" x 12" size, the official should question the testing procedure. If it is determined that improper test cylinders are being made, a citation should be issued. Additionally, the State Board of Building Regulations and Standards should be notified so that appropriate action can be taken against the license holder and/or the licensed laboratory.

4.) As a final note, it is important to realize that a non-certified laboratory may be involved in the testing of concrete if such laboratory testing is subcontracted to a licensed concrete testing laboratory. However, all concrete test cylinders made in the field must be made by qualified technicians, possessing a valid Class "A" Concrete Technicians License.

LIMITED APPROVAL OF *BLAZEGUARD*

At it's December 15, 1992 monthly meeting, the Board of Building Regulations and Standards (BBRS) unanimously voted to grant **limited** approval of Weyerhauser Company, Fire Protective Products Division's *BLAZEGUARD* (marketed by Citadel Architectural Products, Inc. of Tacoma, Washington).

BLAZEGUARD is a composite panel consisting of a fiberglass reinforced inorganic calcium silicate facing, laminated to wood structural panels of plywood or oriented strand board or similar material. Since the calcium silicate sheet is glued to the wood panel, the APA span rating for the panel is not affected.

The Board's vote was to allow the use of *BLAZEGUARD* in the manner dictated by BOCA's Evaluation Services Research Report No. 90-73. However, because the current State Building Code is based on the 1987 version of the BOCA Code, and the research analysis was performed with respect to the 1990 BOCA Code, there are differences in some of the section numbers referenced in the report. Where the research report refers to Sections 906.5 and 907.6.2 of the BOCA Code, the comparable sections of the Fifth Edition of the Massachusetts State Building Code are Sections 906.6 and 908.5.2, respectively. Applicable portions of the research report (BOCA # 90-73) are presented below. Massachusetts Section numbers substituted this excerpt.

EXCERPTS FROM BOCA RESEARCH REPORT (with Massachusetts Code Section Numbers Substituted)

"BLAZEGUARD IS PERMITTED TO BE USED AS ROOF SHEATHING OR WALL SHEATHING FOR BUILDINGS OF TYPE 3, 4 AND 5 CONSTRUCTION. BLAZEGUARD IN 3/8" OR GREATER NOMINAL THICKNESS (WITH CDX PLYWOOD ONLY) IS ABLE TO BE UTILIZED AS A ROOF SHEATHING FOR A DISTANCE OF FOUR FEET (MINIMUM) ON BOTH SIDES OF A FIRE WALL, OR FOUR FEET (MINIMUM) FROM AN EXTERIOR WALL, WHEN IT IS DESIRABLE TO TERMINATE AN EXTERIOR WALL OR A FIRE WALL AT THE UNDERSIDE OF A ROOF DECK. BLAZEGUARD IS AN ACCEPTABLE ALTERNATIVE TO COMPLY WITH SECTIONS 906.6 AND 908.5.2 (MASS. CODE SECTION NO.'S CITED)...".

In summary, such approval allows the use of *BLAZEGUARD* primarily as a substitute for "Fire Retardant Treated" (FRT) wood, but only in limited applications. In particular, the approval would allow the use of *BLAZEGUARD* as a substitute for FRT roof sheathing on either side of a fire wall or fire separation wall, thus providing the construction industry a substitute for FRT in Types 3, 4 and 5 construction. If possible, it would be wise to obtain a copy of the referenced BOCA report to examine further details of the product.

RECENT STATE BUILDING CODE APPEALS BOARD DECISIONS

Section 126.7.11 (Contents of Decisions) of the code states: "Any decision shall not be considered by any person or agency as a precedent for future decisions."

Appeal Docket #91-070

The Appellant testified that he represented the owner of an office building located in the Western part of the state. Within the lobby of this structure lies a small fast-food (salad bar style) restaurant. The restaurant operates from approximately 7:00 am until 8:00 pm. However, the remainder of the building, essentially, is in operation at all times. During the lunch and dinner hour rush, the restaurant is quite busy. Often times patrons spill out into the surrounding lobby areas. In an effort to accommodate these patrons more comfortably, the Appellant continued, the architect selected sliding entry doors, as opposed to swing doors, that could be secured in an open position. Sliding doors are a viable option for this arrangement. However, to be considered part of a means of egress, horizontal sliding doors must comply with all criteria set forth under Section 613.4 of the Fourth Edition of the Building Code (813.4 of the Fifth). The selected doors met all provisions under this section except the final point that requires the door assembly power supply to be electrically supervised at a constantly attended location. Therefore, the local building official has cited a violation of Section 613.4 (8) of the Fourth Edition of the Code. Because of the constant activity in the area, he Appellant argued, that electrically operated and supervised doors would actually impede safe egress from the space rather than enhance it. Consequently, the Appellant requested a variance from the cited section.

The Local Building Official was unable to attend the hearing, but did present written evidence of the violation.

Following testimony, the Board found that the Local Building Official had correctly interpreted the provisions of the building code with respect to this matter. The Board, however, concurred with the Appellant's contention that the safety of the patrons would be better served if the sliding doors were not electrically supervised. Thus, the Board unanimously voted to grant the variance to the provisions of Section 613.4 of the Fourth Edition of the State Building Code, provided the sliding doors remain in the open position at all times, and that the variance relates only to the use described in this decision. If, at time in the future, the space were to change Use Group Classification, the matter would need to be re-examined by the Board to determine if the new arrangement warranted alternative methods of compliance.

END OF THE YEAR

Again, another year has come to an end. As each year passes, and we all get a little older, it sometimes becomes difficulty to remember what happened in which year. Was it last year that both the Pats and the Sox were at their best? No, that was 1986/87. This was the year that each took up residency in that basement apartment; you know, the one without a view [of the future].

Although, the country continued to see some difficult times in 1992, all indicators point to a brighter 1993. We hope that each of you enjoyed the holiday season, and we wish all a very happy and healthy new year.

EDITOR IN CHIEF	Rob Anderson
SUPERVISING EDITOR	Brian Gore
OTHER CONTRIBUTING STAFF	Tom Riley

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The Commonwealth of Massachusetts

STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

CODEWORD

WILLIAM F. WELD
Governor

THOMAS C. RAPONE
Secretary

June, 1993

Thomas L. Rogers
Administrator

WHO IS A BUILDING CODE ENFORCEMENT OFFICIAL ?

The Massachusetts General Laws (MGL) are a body of rules prescribed by the legislature which govern the conduct of all citizens of the Commonwealth. These laws have binding and legal force on all the Commonwealth's citizenry and are superseded only by federal law (the law of the land, so to speak). Each portion of law is arranged in chapters and sections, dependant upon topic. The word chapter is abbreviated c, and the word section is referenced as §.

MGL c 143 § 3 is the portion of law that dictates employment criteria, title designations and qualifications of all those who wish to serve as a building code enforcement official within the Commonwealth. A variant of this law dates back to 1872 when c 243 first referenced building officials. Since then, there have been numerous amendments to the law to bring it to its present language.

In 1973, the first paragraph of c 143 § 3 was revised to read, in part, "The chief administrative officer of each city or town shall [emphasis added] employ and designate an inspector of buildings or building commissioner as well as such other local inspectors as are reasonably necessary to assist the inspector of building or building commissioner . . " in his duties.

This paragraph clearly illustrates the need for each municipality to employ a chief building official and identifies this individual as the **inspector of buildings or building commissioner.** Also, if he/she finds it necessary, he/she may also employ other inspectors to assist in the operation of the building department. These individuals shall be called **local inspectors.** As imposed by the established rules of the state, these are the only legally recognized titles for those who serve as building code enforcement officials within its boundaries.

Looking further, we find the qualifications for each official, which read: "Each inspector of buildings or building commissioner shall have had at least five years of experience in the supervision of building construction or design or in the alternative a four [emphasis added] year undergraduate degree in a field related to building construction or design. In addition, such person shall have had a general knowledge of the quality and strength of building materials; a general knowledge of the accepted requirements for building construction, fire prevention, light, ventilation, safe exits and the rules and regulations promulgated pursuant thereto pertaining to accessible design standards; and a general knowledge of other equipment and materials essential for safety, comfort, and convenience of the occupants of a building or structure".

The experience requirements for local inspectors are identical to that of inspector of buildings and building commissioner. However, a local inspector may substitute a two year associate degree in a field related to building construction or design, for the educational requirements.

The law is very specific as to the qualifications necessary for those who wish to serve in the capacity of a building official, and have been for some time. Today, if one references the 1993 Cumulative Annual Pocket Part for the General Laws as issued by the Westlaw Publishing Company (the portion of the book that identifies changes to existing sections of law) he/she finds an additional qualification which reads: "Every inspector of buildings, building commissioner or local inspector shall be certified by the board of building regulations and standards in accordance with regulations promulgated by said board".

As most of you are aware by now, this change (known as Chapter 168 of the Acts of 1992) came into effect on November 12, 1992. Since that time, the Board has been busy setting the groundwork for the certification program. The first point of business, of course, was to properly identify all those who were eligible for the "*grandfather clause*" (ie: those who were considered qualified and certified by virtue the position held on November 12, 1992). During this process, we learned that the term **building Inspector** flourishes throughout the cities and towns of the Commonwealth. The term is clear; everyone understands who is referenced when using this term. However, as we have seen, the term does not have meaning in the eyes of the law.

Because of the difference in terms, there was some confusion in the issuance of certificates. Some individuals who should have been issued certificates as **Inspector of buildings/building commissioner** received a certificate as a **local Inspector.** Thankfully, this confusion has subsided, and by the time this document is issued, all erroneously issued certificates should be corrected.

With this behind us, the next important step in the certification process is the issuance of the regulations governing the program. They are titled the *Rules and Regulations for the Certification of Inspectors of Buildings, Building Commissioners and Local Inspectors* (generically referred to as **building code enforcement officials**), and are given the Commonwealth of Massachusetts Regulation (CMR) number 780 CMR-7. A copy of the regulation is enclosed with this issue for each building official. Additional copies will be forwarded to every city and town clerk. Anyone else who is interested in the process may obtain a copy through the State House Book Store, Room 116 of the State House, telephone number (617) 727-2834. With the regulation, one should learn all there is to know about the certification process. It is important that each building code enforcement official, city and town clerk and administrator read and understand these regulations as well as the enabling legislation (c 143 § 3, and its amendment, c 168 of the Acts of 1992). The Board hopes that the regulation is clear and concise, and thereby sets the stage for a new generation of building code enforcement officials.

As we related in the last issue of CODEWORD, the Board of Building Regulations and Standards has long advocated the certification of building officials. Nearly all professional organizations require certification or licensure of its ranks to lend credence to their crafts. Doctors, lawyers, architects and engineers all demand rigid credentials for those who wish to enter these professions. For each, an individual must be qualified in line with certain criteria, and must pass selected examinations to ensure a particular level of knowledge. Members of these professions perform duties on which the public relies. Therefore, the public must have some level of confidence in their behavior.

A building official is also charged with a great duty, that of public safety. With the enactment of Chapter 168 of the Acts of 1992, a building official also must demonstrate his abilities. However, the most important aspect of building official certification is not the requirement for examination (for those who were not "*grandfathered*"), and it is not the testimonial that is issued in evidence of certification. Rather, the most important part of this certification process is that **it must be maintained through continuing education**, even for those "*grandfathered*" individuals. Without continued study, the certificate merely becomes a piece of paper to hang on the wall. With continued study, the building official is kept abreast of developments in building code technology, is assisted in deciphering confusing code language, and, most importantly, is afforded the opportunity to interact with his peers to ensure the building code is enforced consistently throughout the Commonwealth.

Charles Stanhope Damrell was the first legally recognized building official in the Commonwealth, appointed to the City of Boston's building department sometime in 1872, following the great Boston fire of that same year. We have made great progress since that time, but there is more road to travel. The answer to the question; who is a building code enforcement official, is answered with the rules and regulations governing certification.

THE STANDING CERTIFICATION COMMITTEE

In the pages of 780 CMR-7, one finds reference to the *Standing Certification Committee*. This committee was assembled in order to oversee the operation of the certification process. For the past few months, the committee has been busy writing the regulations referenced above, reviewing applications, answering queries and conducting interviews pertaining to the certification process. The committee's work has been unwavering. For this, the Board would like to introduce each member and offer its thanks for the hard work and dedication demonstrated by each.

The committee is comprised of nine members, six of whom are building officials; they are:

- **Matthias Mulvey**, Building Commissioner from the City of Quincy and chairman of the committee - representing the Massachusetts Building Commissioner's Association - appointed to a two (2) year term,
- **Daniel O'Sullivan**, Local Inspector from the City of Springfield and vice-chairman of the committee - representing the Building Officials of Western Massachusetts - appointed to a four (4) year term,
- **David Thyng**, Building Commissioner from the Town of Brewster - representing the Southeastern Building Officials Association - appointed to a three (3) year term,
- **Donald York**, Local inspector from the City of Holyoke - member 'at large' - appointed to a two (2) year term,
- **Robert Betit**, Inspector of Buildings, from the Town of Dalton - member 'at large' - appointed to a three (3) year term,
- **Paul Nonni**, Local Inspector, from the City of Somerville - member 'at large' - appointed to a four (4) year term,
- **Paul Sharon**, Town Manager for the Town of Ashland - representing the Massachusetts Municipal Association - appointed to a three (3) year term,
- **Robert Anderson**, staff to the Board of Building Regulations and Standards - designee for the Board - appointed to a four (4) year term,
- The member from academia is currently vacant.

The Board wishes to congratulate each these individuals on his effort towards the future.

WORK CONTINUES

Although the committee has already dedicated much time to the beginnings of the certification process, much remains to be done. The next step is to develop a list of acceptable credit pertaining to continued education. As indicated in the regulations, one needs to maintain a minimum of forty-five (45) hours of continuing education credit per each three (3) year period in order to retain his certification. There are some courses currently available through national code organizations, private colleges and other associations that offer education on building code matters and general construction practices. However, one may be unsure as to the credit value assigned to these courses. Therefore, this list will attempt to identify all courses that are considered acceptable as educational credit towards continued certification.

Probably the most important question answered with this list is: will district and/or association meetings count towards continued education? The answer to this question is, **yes**, although the committee has not established a definitive value for these engagements. For now, it is wise to maintain a **legible attendance sheet** for each

WORK - CONTINUED

meeting. It is best to **type** out a list of all members that can be checked off as the meetings pass, rather than transmitting a **sign-in** sheet, which is often unreadable. The three (3) year "clock" will not start ticking until this list has been processed and issued. So, please hold on to your records until these last details are straightened out. Within the coming weeks, each building official who is certified in accordance with this process will receive follow-up information as to the proper method for maintaining and one's certification.

A FINAL NOTE

All applications to the *Standing Certification Committee* for upgrade of certification status have been examined, and action has been taken. Not all applicants were successful in their attempts, but at least everyone was given the opportunity.

Because of the vast number of applications, it may be a while before each applicant is notified as to his status. So, please be patient, at least until the beginning of July. If after this time you have not received a response to your application, you may wish to call the office of the Board of Building Regulations and Standards for an update.

MEET THE BOARD

Sometimes, the most difficult thing to understand about a process or profession is its terminology. Nearly every profession maintains a jargon that is unique to its membership. The language is not often difficult, but often confusing if you are not attuned to the facts.

Many times one is confused as to the make-up of a certain board or committee, or as to their authority. Anachronisms such as BBRS are freely used in our office and repeated outside the office, often times receiving looks of puzzlement in return.

We often hear people refer to the Building Code Commission as the promulgator of the building code, and this was once true. However, this is no longer the case. This committee has been defunct since the early 1980's. Now the promulgator of the code is the BBRS (Board of Building Regulations and Standards).

Therefore, in an effort to clarify any confusion that may exist and to bring the Board of Building Regulations and Standards (BBRS or the Board) to a 'human' scale, this and subsequent editions of CODEWORD will introduce the legal mechanism which established the Board, will explain its statutory membership, and will profile the backgrounds of each member.

(Bit of History)

Following the demise of the Building Code Commission, Chapter 348 of the Acts and Resolves of 1984 created MGL c 143 sections 93 to 100. This legislation established the Board of Building Regulations and Standards (BBRS) and outlined the rules under which the Board must operate. Under the law, the BBRS is charged with the adoption and administration of the State Building Code. The law requires that the Code is to be enforced uniformly throughout the State, thus avoiding the confusion which would arise if each of the 351 municipalities were to adopt its own building code. The BBRS is an agency within the Executive Office of Public Safety and reports directly to the Secretary of Public Safety, Thomas C. Rapone.

This chapter also sets the standards for the membership of the Board. In doing so, it ensures that the membership represents all facets of the design, construction and code enforcement communities by including engineers, architects, building officials, fire officials and contractors.

History - Continued

The Board is comprised of 11 members; two (2) who are *ex-officio* members, which means they serve by virtue of the offices they hold. One is the State Fire Marshall, Mr. F. James Kaufmann, the other is the Chief of Inspections for the Division of Inspections, Department of Public Safety, Mr. Thomas L. Rogers.

The other nine (9) members are appointed by the Governor. They represent the following professions; a Registered Architect; a Registered Mechanical Engineer; a Registered Structural Engineer; a Building Trades Representative; a General Contractor of Commercial Buildings; a General Contractor of One or Two Family Homes; a Head of a Local Fire Department; an Inspector of Buildings in a City and ; an Inspector of Buildings in a Town.

In this issue we will introduce the two *ex officio* members of the Board, and a staff member.

Mr. Thomas L. Rogers, by virtue of his position as Chief of Inspections is also the Administrator to the Board and an *ex officio* member. Mr. Rogers began his service with the Board in September of 1992. Tom possesses extensive knowledge of building construction and building regulation, attained through his years as Assistant Building Commissioner in the city of Boston and as manager at the Boston Water and Sewer Commission. Tom has also achieved great success in entrepreneurial ventures, ranging from general contracting and roofing, to energy conservation services for commercial and residential facilities. Tom is affiliated with both the Massachusetts Building Commissioners and Inspectors Association and the Building Officials and Code Administrators International. In addition to maintaining the currency of the building code, Tom believes that the continued education of building officials (and construction supervisors) are his primary goals in his duties with the Board. Consequently, Tom is eager to see the certification process in full swing.

Mr. F. James Kauffman is the State Fire Marshal and, as such, also holds an *ex officio* seat on the Board. Mr. Kauffman has had a distinguished career at the National Fire Protection Association (NF,PA). During his twenty-one years at NF,PA, Jim helped develop behavioral techniques for avoiding human error in fighting fires, in public safety matters and in emergency medical situations. Jim also became the organization's expert in panic behavior and crisis management. Jim is considered a leader in loss prevention and risk management and has worked closely with both national codes and standards organizations, and public service figures.

Of course, a Board cannot operate without an efficient staff, and the Board is fortunate to have Ms. Anne Marie Rose as its office manager. Anne-Marie came to the Board Staff in May of 1992 after employment with the Department of Correction. Prior to that she spent four and one-half years at the Bureau of State Office Buildings. Anne's talents extend far beyond that of office functions. In fact, her artistic talents were employed in the design of the certificates issued to all newly certified building officials, and her diligence to the process helped make certification a reality.

FUTURE PLANS

In line with Mr. Roger's belief that one cannot attain too much knowledge, Tom is the process of creating an open network at the office of the BBRS that may be accessed by all those who possess a personal computer and modem. Information contained on this network will range from construction supervisor and home improvement contractor registrant data, postings of important meetings and seminars and even access to the latest edition of the code. Such plans take time, money and effort, and will not likely happen overnight, but, knowing Mr. Roger's determination, it will happen.

NEW EMPLOYEES

Since we are on the subject, both the Board of Building Regulations and Standards and the Department of Public Safety are pleased to announced that each has hired some new staff who are involved with issues of the building code.

NEW EMPLOYEES - CONTINUED

Mr. Ken Lucas is the newest staff member to the Board. Among his many duties, Ken will oversee the operation of the Home Improvement Contractor Registration process and complaints pertaining to licensed construction supervisors (the License Review Committee process). Ken's cool demeanor will play an important role in handling these tasks.

Mr. John Wojociechowicz (pronounced just as it is spelled), Gene Novak and Joe McEvoy are the new District State Building Inspectors employed by the Department of Public Safety.

John is stationed in the Boston office at Ashburton Place and is in charge of the Boston district. Gene is settling into his office and is assigned the Springfield District. Finally, Joe is shaking things up in the Pittsfield District.

We wish to welcome each of these gentleman to the office of Public Safety, and we wish each much success in his new position.

CODEWORD

This issue's **CODEWORD** is **liquefaction**. The Fourth Edition of the Building Code defines **liquefaction** as "a group of phenomena occurring in saturated cohesionless sandy and silty soils consisting of a large decrease in effective stress (total stress minus pore pressure) accompanied by large deformations under either static or cyclic loading". The word is not defined within the Fifth Edition of the code, perhaps since this definition may be more confusing than helpful.

In simple terms, **liquefaction** is the process of liquefying, or the state of being liquified. But, even this additional language does not seem to clearly define the term. To understand its definition, it is helpful to understand something about soil conditions.

Table 1201 contained in Article 12 of the Fifth Edition of the code identifies *allowable bearing pressures for foundation materials*. In this table, the reader is provided guidance as to the amount of weight (or load) a particular soil will likely sustain. The materials are classified numerically from one (1) to eleven (11) in accordance with their bearing capacity; one being the most capable material.

Logically, hard, dense materials such as massive bedrock or granite are capable of supporting large loads. The bearing pressure for these soils, according to the table, is one hundred (100) tons per square foot. Conversely, soft, loose materials are able to provide relatively small levels of bearing capacities. Loose, fine and silty sands which are identified as class nine (9) materials in the table, for instance, can provide a bearing capacity measuring only one (1) ton per square foot. As one may expect, along with its modest strength, these materials are subject to other factors that may further reduce their capabilities. One such factor is liquefaction.

Uniform, fine sand, in particular, is subject to **liquefaction**. The condition exists due to a strong presence of water or liquid in the soil. This liquid can create a number of problems with respect to the soil's bearing strength. The most frightening condition can occur as a result of soil movement due to an earthquake. The extreme shaking of the earth can cause a loose, sandy soil to lose most, if not all, of its bearing capacity; in effect turning the soil into a form of quicksand. This effect, of course, is termed **liquefaction.**

Because these soils are susceptible to **liquefaction** does not mean that they cannot be utilized effectively as a bearing stratum. Section 1113.8 and Figure 1113.2 of the code provide means to identify soils that may be susceptible to liquefaction based on the depth to the water table and the blow counts. Recognizing that something may be a problem is often the best way to avert any future difficulty. Such is the case with **liquefaction.**

BEYOND THE CALL OF DUTY

Mr. Anthony "Tony" Patillo, building code enforcement official from the Town of Northampton thought that it was a day like any other, how wrong he was. He started out early one morning in February of this year to conduct a rough inspection at 211 Elm Street where a bedroom was being added to an existing second floor apartment. While he was outside the building, a woman dashed from the first floor apartment clutching her throat and motioning desperately. Tony hesitated for a moment, unsure of her predicament, then ran towards the woman (Lida Moser) to discover she was choking on her breakfast food. Tony immediately performed the Heimlich maneuver and dislodged the fragment that was causing the choking. Tony also helped to calm the frightened woman. Ms. Moser exclaimed how lucky she was to have such a caring individual nearby when the incident took place.

Tony's actions were certainly beyond the call of duty, and we wish to commend him for his actions.

APPOINTED DUTY

Also, it is our pleasure to announce that Mr. Brian Gore, P.E., and Technical Director to the Board of Building Regulations and Standards, has been appointed to the Building Officials and Code Administrators (BOCA) Code Interpretations Committee.

In a letter from Mr. Gerard M. Garafalow, President of BOCA, identifying Brian's appointment, he writes: "BOCA committees are the foundation upon which the system of the *BOCA National Codes* and related services are built and their importance cannot be overemphasized".

The Board agrees with this analysis, and wishes to congratulate Brian on this important appointment and wishes him much success in his duties with the committee.

OFFICIAL INTERPRETATIONS

Enclosed with this issue of CODEWORD are two (2) Official Interpretations of the State Building Code. An Official Interpretation is a decision rendered by the full Board of Building Regulations and Standards as to the correct reading of a particular section of code. An Official Interpretation is sparked by a written inquiry from a building official, attorney, or anyone else who may be unclear as to the language of the code. As the promulgating agency for the code, the Board is empowered by law to interpret its regulations.

An Official Interpretation is different from a staff interpretation. A staff interpretation is the opinion of a particular staff member as to the correct reading of a section of code based on his/her research. Although a staff interpretation certainly should be highly regarded, it does not have the full effect of code. In essence, it is one man's or women's opinion.

An Official Interpretation is also based upon extensive research on which the opinion is developed. However, an Official Interpretation is debated before the full Board at one of its regular meetings to ensure that the language of the interpretation truly reflects the intent of the code. Once debate is complete, and the interpretation is voted and issued, it is considered part of the code. In other words, it has full effect and force of the code.

UPDATE

The last set of amendments to the building code were issued and became effective on June 19, 1992. The Board will soon compile a list of the changes that were presented and ultimately approved through its public hearing process since that date, and will issue a further set of amendments sometime this summer. Please ensure that your building codes are up-to-date by inserting this information in the proper position upon receipt. Of course, it is always a wise idea to retain the old pages of the code so that changes may be traced, if necessary.

APPEALS COURT DECISION

Recently, a decision of the Board of Building Regulations and Standards, Building Code Board of Appeals, was challenged in court. The issue was a dispute as to who has rightful authority to determine building code requirements for automatic fire warning systems with respect to Massachusetts General Law c 148, § 26B (*Automatic fire warning and smoke detection systems in buildings or structures not exceeding seventy feet in height*).

The decision of the Appeals Court of the Commonwealth reads, in part:

"Where it must be determined what satisfies the requirements of the State Building Code for automatic fire warning systems, **the final authority for such a decision rests under state law with a municipality's building inspector, not with its fire chief** [emphasis added].

In reaching this conclusion, we [the Appeals Court] affirm rulings of the Building Code Appeals Board and Superior Court.

On the Basis of language appearing in G.L. [Massachusetts General Law] c 148, § 26B, the [plaintiff] fire chief of Cambridge claims exclusive authority to determine what satisfies the requirements of the State Building Code for automatic fire warning systems. We conclude, conformably with a decision of the State Building Code Appeals Board and the decision of a Superior Court judge on review under G.L. c 30A, § 14, that the final authority to determine what constitutes compliance with the Code resides with the building inspector of the municipality, who in Cambridge is the commissioner of buildings and housing (the building commissioner). Accordingly, we affirm the judgement of the Superior Court.

The object of the controversy is a dormitory construction project undertaken by the Massachusetts Institute of Technology (M.I.T.). Although the arcana [mystery] of the Code dispute are interesting, we doubt that it will advance the jurisprudence of the Commonwealth to elaborate upon them. Distilled, the question is whether, as the fire chief insists, the Code requires sprinkler flow devices connected to an annunciator panel which would show the zone in which an alarm had been activated, or as the building official ruled, it satisfies the Code to install water flow devices which trigger audible fire alarms throughout the entire building and would identify, on the master annunciator panel, in which particular wing a sprinkler had gone off. The system the fire chief prefers would identify more precisely where a fire appeared to be burning.

What the fire chief fixes upon is a one-sentence paragraph in G.L. c 148, § 26B, as appearing in St. 1975, c 676, § 2, which provides: "The head of the fire department as defined in section one shall enforce the provisions of this section." Section 26B prescribes that a building occupied for residential purposes which is less than seventy feet high shall be protected with an approved automatic fire warning system in accordance with the Code. Such a system, § 26B goes on to say, shall include the features of automatic smoke detection in conjunction with the approved fire detection devices."

The court's decision concludes by stating: " On the view we have taken of the case , it is not necessary to review the correctness of the interpretation of the fire warning system provisions of the Code made by the commissioner and the Board. The Code interpretation problem, a matter of nuance, is a classic example of when the expert technical knowledge of an administrative agency comes to bear and should not be disturbed in the absence of powerful evidence to the contrary. We found no such evidence in the record of this case."

Although the court's decision is strong and decisive, we understand that it will be challenged still further to the State Supreme Court.

UNUSUAL CODE

Section 711.0 of the code is a somewhat unusual piece of code language. It is one of the very places within the code where dimensional requirements are set forth with regard to land surrounding a building, as opposed to dimensions within a building. At first glance, the title of the section; *Rear Yards*, reads as if it were zoning language. However, the intent of the building code is to control the manner in which buildings and structures are erected within the Commonwealth to ensure a consistent level of public safety, not (necessarily) to control the use of the land.

The intent of Section 711.0 is to set a minimum dimension for rear yards for certain building uses (R-2, R3 and I-3) In order to achieve a minimum, acceptable level of light and ventilation. But, the provision is only valid if the building is truly relying on this open space (or yard) to accomplish these minimum levels. This is the limited scope of the requirement. If one reads further in the code, he/she finds under Sections 705.0 and 709.0 that light and ventilation may be achieved artificially. (Sometimes simple language is the most confusing.)

RECENT STATE BUILDING CODE APPEALS BOARD DECISIONS

Section 126.7.11, *Contents of decisions*, of the code states; "Any decision shall not be considered by any person or agency as a precedent for future decisions".

Appeal Docket #92-043

The local building official refused to issue a permit for the renovation of a totally preserved historic building due to a violation of Section 635.4.4 of the Fifth Edition of the State Building Code. The building is designed to serve an occupant load of about fifty (50) people. Section 635.4.4 limits the occupant load on the second floor of a totally preserved building to forty (40) individuals. The Appellant wished to increase the allowed load on this meeting room floor to a total of seventy-five (75) individuals. Although the Appellant acknowledged that such a request is contrary to building code provisions, she felt that the increase in number was warranted due to many added safety features incorporated into the renovation, including; suppression of the attic and basement spaces, installation of a fire alarm system (hardwired to the fire department), addition of a stand pipe system servicing all floors of the building, elimination of all gas lines to the building, updating of the electrical system and the upgrading of the structural capacity of the building, all of which adds to the level of safety of those who would occupy the space.

The Appellant continued to detail technical data to support the appeal. First, the limited size of the building results in short travel distances that must be traversed by the occupants in the event of an emergency. The maximum travel distance is one-hundred and twenty (126) feet. The code allows up to two-hundred feet of travel in a non-sprinklered building. The consultant reiterated that the building is partially suppressed and that the basement and first floor are constructed of fire-resistant materials (the remaining of the building is Type 4A, Heavy Timber). Also, the Appellant cited the results of safety tests performed in accordance with the Government Services Administration's Evaluation of Egress Requirements, and the National Fire Protection Association's Alternate Approaches to Life Safety. Each of these procedures analyzes egress facilities to determine adequacy in an emergency. With respect to each evaluation, the time to egress the building from its most remote point proved to be about three (3) minutes, below the standard set by most building codes. These figures, along with the additional safe-guards built into the structure, he continued, make it a safe environment to house the additional people.

No testimony was offered by the local building department. However, the Appellant stated that he was given authorization to express the support of both the local building department as well as the local fire department.

The Board found that the building official had correctly cited a violation of Section 635.4.4 of the State Building Code. The Board was impressed with the additional safety precautions that were afforded the occupants in lieu of the required second egress. But the Board expressed its concern as to the likelihood of having large numbers of elderly Individuals or very young children within the structure. The Appellant responded that this scenario is a possibility. However, the test procedures cited earlier takes Into consideration such a condition. The results of a test run with elderly or young occupants increases the time of exit, but even with the increase, the time still compares well with that required by the building code.

With this, the Board unanimously voted to vary the requirements of the building code in order to allow for the additional occupant load (from 40 to 75 persons).

TERMS OF THE TRADE

This issue's **Term of the Trade** is a series of terms; **malfeasance**, **misfeasance**, and **nonfeasance**. According to the *Legal Aspects of Code Administration*, 1984 edition, printed by the Building Officials and Code Administrators International (BOCA), the International Conference of Building Officials (ICBO), and the Southern Building Code Congress International (SBCCI), **malfeasance** is the act of "doing something which should not be done at all" (the act is wholly illegal); **misfeasance** is "the improper doing of an act which may lawfully be done"; and **nonfeasance** is "the failure to do something which should have been done".

The terms may be simply explained with everyday examples, and then may be applied to the specific work of a building official. Murder, rape or robbery are obvious examples of **malfeasance**. Each is a clearly illegal act that should never have been committed. Of course, one who is accused of these crimes is not charged with **malfeasance**, but is charged with the crime itself.

A hunting accident may be considered an act of **misfeasance**. A hunter is allowed to discharge a rifle or other weapon in designated areas during certain periods of the year, and most are very skilled and knowledgeable of proper safety procedures. However, there are many cases of a properly trained and licensed hunter accidentally killing an innocent party. The hunter was engaged in a legal act, but discharged his duty improperly.

Nonpayment of taxes; an extreme and truly frightening example of **nonfeasance**. We are all painfully aware that income taxes must be paid each year. However, some of us may be tempted to avoid such responsibilities at one time or another, which is not a very good idea.

The key to understanding these terms is knowing there is a duty or responsibility owed to someone or something. If this duty is breached, a problem arises.

Since a building official is a public servant, there is a duty owed to the public; mainly to uphold public safety. To this end, the building official is charged with enforcing the provisions of the State Building Code. In order to ensure compliance, he must inspect a project's construction at certain intervals. If he were to avoid this duty all together, he may be accused of **nonfeasance**. If he conducted faulty inspections, he may be guilty of **misfeasance**, and, of course, if he were to improperly profit from the performance of his duties, he may be accused of **malfeasance**.

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The Commonwealth of Massachusetts

STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

CODEWORD

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December, 1993

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Administrator

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SPECIAL ISSUE FOR CERTIFIED BUILDING CODE ENFORCEMENT OFFICIALS

IMPORTANT INFORMATION REGARDING YOUR CERTIFICATION

This issue of **CODEWORD** contains important information regarding your certification as a building code enforcement official. It attempts to answer **all** the remaining questions surrounding the process. It contains the *Standing Certification Committee's Policy for Maintenance of Certification Status*, the committee's *Application for Continuing Education Credit* and *Continuing Education Reporting Form* and a host of other material relating to the certification program. But, most importantly, it announces the first Board of Building Regulations and Standards' sponsored seminar applicable towards your continuing education and certification maintenance, along with application to attend.

It is incumbent upon each certified individual to read and understand the material within this document.

ANSWERING THE REMAINING QUESTIONS

In speaking to individuals on the phone and at various meetings throughout the Commonwealth, it is clear that there remain many misconceptions regarding the certification process. In this article, we pose a question relating to the program, then provide the answer. If, after reading the article you can think of any other question, please put your thoughts in writing and forward them to the Office of the Board of Building Regulations and Standards, attention *Standing Certification Committee.*

Regarding the *"grandfather"* process:

Question: I received my Massachusetts certification as a *Local Inspector* through the *"grandfather"* process, and now I would like to attain certification as an *Inspector of Buildings\Building Commissioner.* What must I do?

Answer: Since you are already certified as a *Local Inspector*, you eliminate one step in the process; ie: you do not need to take the examinations relating to this level of certification. However, in order to advance your level of certification to that of *Inspector of Buildings\Building Commissioner*, examination is required.

Question: What examinations?

Answer: The examinations required are those that comprise the Council of American Building Official's (CABO) *Certified Building Official*. This examination consists of three (3) separate modules; a management module, a legal module and technology module. All three (3) modules must be taken together the first time around.

Question: What if I do not pass all three (3) modules the first time, can I still become certified?

Answer: If you do not pass all three (3) modules the first time, there is no cause for worry, you may still become certified. If you pass one (1) module, you only need to take the remaining two (2) modules, again. Once you pass a module, you do not need to take it again.

Question: How many chances do I get to pass each module?

Answer: The regulations allow a newly appointed individual eighteen (18) months in which to become certified. Since the CABO examinations are offered twice each year, this provides at least three opportunities for a newly appointed individual to pass each module. However, since you currently serve as a *Local Inspector*, and you are merely taking the exams in preparation for the future, the number of opportunities is virtually limitless. If, in the interim you were to become hired as an *Inspector of Buildings\Building Commissioner*, you would need to comply with the eighteen (18) month schedule.

Question: Does this mean I can be hired as an *Inspector of Buildings\Building Commissioner* even though I am not yet certified?

Answer: Yes. An individual only needs to be **qualified** with respect to Massachusetts General Law in order to be appointed to the position of *Inspector of Buildings\Building Commissioner*. As mentioned above, you then have eighteen (18) months in which to gain your certification. (This is also true for the position of *Local Inspector*.) Of course, it is desirable to have received your certification prior to being hired. One must also remember that this appointment is considered conditional (pending successful completion of necessary examinations; see 780 CMR-7, Section 1.7.4.)

Question: This sounds great, where can I get more information on the required examinations?

Answer: It is best to contact the CABO (or BOCA) organization directly; call (708) 799-2300 extension 334 and ask for all pertinent information relating to the **CABO Certified Building Official** examinations.

Question: Once I pass all the modules, what do I do?

Answer: Attached to this document is an ***Application for Certification as a Building Code Enforcement Official***. When you have completed the examinations, simply fill out the application, provide evidence of your passing scores, and a copy of your latest resume, and forward the package to the Office of the Board of Building Regulations and Standards, attention *Standing Certification*

Committee. If all is in order, you will receive a certificate back in the mail identifying that you have satisfied all criteria necessary to become certified as an *Inspector of Buildings\Building Commissioner* in the Commonwealth.

Terrific, I'll get started right away.

Regarding the "*upgrade*" process:

Question: I was certified as *Local Inspector* under the "*grandfather*" process, but I was denied an upgrade of my certification status. Why?

Answer: The legislation that created the certification process only required that those individuals who were in office on November 12, 1992, and **qualified** to be in office, to be "*grandfathered*" into the program **in the position held on this date**. Therefore, if you met the qualifications of the process for a *Local Inspector*, the legislation only allowed you to be certified in that capacity. With that, the intent of the law was satisfied. However, the *Standing Certification Committee* realized that there were individuals serving as *Local Inspectors* who rightfully deserved certification in the higher level. Therefore, the Committee allowed **all** those certified as *Local Inspectors* to apply for the upgrade. Although this decision created a mountainous level of work, the Committee was willing to sacrifice the time. All applications for upgrade were reviewed individually and judged fairly.

Regrettably, not all applicants were successful in their quest for upgrade. The successful candidate needed to meet two (2) criteria.

One, he\she needed to be **qualified** to serve as an *Inspector of Buildings\Building Commissioner* as required by Massachusetts General Law (Chapter 143 § 3).

Two, he\she had to have served in the capacity of *Inspector of Buildings\Building Commissioner* for at least six (6) months between the period of time spanning November, 1990 through November, 1992.

In general, this limited the successful candidate to one who was appointed to the position of *Acting Inspector of Buildings\Building Commissioner* (or similar title), due to a prolonged illness or absence of the true commissioner (or similar circumstance).

Question: Because I did not receive an upgrade, does this mean I can never become an *Inspector of Buildings\Building Commissioner*?

Answer: No! If you were denied an upgrade of certification status, it merely means that you were not "*grandfathered*" into this category. You may still gain your certification as an *Inspector of Buildings\Building Commissioner* through the examination process detailed above. Of course, you must meet or exceed the minimum qualifications defined in the general law, also (Chapter 143 § 3).

Question: Once I gain my certification as an *Inspector of Buildings\Building Commissioner*, does that automatically put me in charge of my municipal department?

Answer: No! Possessing certification as an *Inspector of Buildings\Building Commissioner* does not place you into the position, or entitle you to the higher position. Possessing this certification is an added credential to your resume. Conceivably a city or town could have two (2) or three (3) or more **certified** *Inspectors of Buildings\Building Commissioners* in its employ. However, only one of those individuals would hold the **position** of *Inspector of Buildings\Building Commissioner* for the city or town.

Question: Then, why should I bother to pursue certification as an *Inspector of Buildings\Building Commissioner*?

Answer: As mentioned above, it is wise to pursue certification in this category while you are not under any pressure to do so. You may never need this advanced certification. But, it will certainly be of benefit should you decide to apply for a job as an *Inspector of Buildings\Building Commissioner* sometime in the future.

Question: Speaking of future prospects; don't you think it is unfair for an individual who was in charge of a very small department where there is little building activity to be "*grandfathered*" into the process as an *Inspector of Buildings\Building Commissioner* just because he was in office on November 12, 1992?

Answer: Inherently, all "*grandfather*" processes contain aspects that some would consider unfair. However, we do not consider this aspect particularly unfair. This logic seems to imply that inspectors in smaller communities are somehow not quite as good as those who are employed by larger communities, and we cannot make that assumption. Our smaller communities have some very knowledgeable and dedicated inspectors. It is true that they may not face the challenge of enforcing the code with respect to a building such as the Prudential Tower, but this does not mean that they are incapable of accomplishing such a task.

Question: Well, that may be true. But, as a *Local Inspector*, it puts me at a disadvantage if I am competing with this individual for a position as *Inspector of Buildings\Building Commissioner*, don't you think?

Answer: We cannot deny that this may be the case, which is why you should be preparing yourself for the CABO examinations as soon as possible.

If you consider the scenario of an *Inspector of Buildings\Building Commissioner* from a town with a population of five thousand applying for the position of Commissioner in the City of Boston, it seems unlikely that he\she would be hired merely because he\she was "*grandfathered*" into the process as an *Inspector of Buildings\Building Commissioner*. The more likely occurrence, is that the individual who is more suited to the position will be hired.

Maybe your right. I'll get going with the examinations right away.

Regarding new inspectors:

Question: I am a registered professional architect, but my work seems to be slowing down, dramatically. I was thinking that I might like to pursue a career in building code enforcement. Can my registration be substituted for certification as a building code enforcement official?

Answer: No! Architectural registration is certainly an admirable credential, and would **qualify** you to hold a position as a building code enforcement official in terms of the general law. But, it is not a substitute for certification.

A building code enforcement official looks at a structure in a totally different manner than an architect. Therefore, although an architect is well suited to serve as a code official, he too must be certified in order to do so. (This holds true for other professional registrations as well.)

Question: Well, I was not "*grandfathered*" into the process, and there is an opening for an *Inspector of Buildings\Building Commissioner* in a town near my house that I would like to apply for. What should I do?

Answer: Go ahead and apply. As mentioned above, you have eighteen (18) months to become certified after you are hired. (Again, please remember that the appointment is considered conditional, pending successful completion of examinations.)

Question: Thanks for the advice, I got the job. Now what?

Answer: Since you were hired as an *Inspector of Buildings\Building Commissioner* you have a two step process before you.

First, you must become certified as *Local Inspector*.

Second, you must become certified as an *Inspector of Buildings\Building Commissioner*.

Of course, since you were not "*grandfathered*" into the process, you must gain these certifications through examination.

Question: What examinations are required for this process?

Answer: In order to become certified in the Commonwealth as a *Local Inspector*, you have a choice. You may take the examinations required of the Building Officials and Code Administrators International's (BOCA) *Certified Building Inspector* or the exams required of BOCA's *Certified Building Plans Examiner*.

BOCA's *Certified Building Inspector's* examination consists of three (3) parts (they are actually labeled as exams in BOCA's literature). These parts (exams) are titled:

Exam 1A	Building 1 & 2 Family Dwelling
Exam 1B	Building General
Exam 3B	Fire Protection General

All three parts (exams) must be taken and passed in order to become certified by BOCA as a Building Inspector, and in turn by Massachusetts as a *Local Inspector*. You may take only one exam the first time around, or all three.

BOCA's *Certified Building Plans Examiner* examination consists of four (4) parts (exams). They are:

Exam 1B	Building General
Exam 1C	Building Plan Review
Exam 3B	Fire Protection General
Exam 3C	Fire Protection Plan Review

QUESTIONS - CONTINUED FROM PAGE 5

Again, you may take only one (1) part (exam) the first time, if you wish, or you may take more. However, it is unlikely that you would be able to take all four (4) at once. This is a decision left up to the administrators of the examinations.

Question: That seems odd. Why do I get a choice? Is one better than the other?

Answer: In determining the requirements for Massachusetts certification, the Committee tried to allow some flexibility in the process. One BOCA certification is not necessarily better than the other, and certainly either is applicable towards your Massachusetts certification. If you look closely, you can see a correlation between the certifications.

If you were to take and pass the following sequence of exams, you may gain certification in both categories from BOCA.

Exam 1A	Building 1 & 2 Family Dwelling
Exam 1B	Building General
Exam 1C	Building Plan Review
Exam 3B	Fire Protection General
Exam 3C	Fire Protection Plan Review

So, for the price of five (5) examinations, you may receive two (2) certifications from BOCA. (This is optional, not required.)

Question: You keep referring to these certifications as BOCA certifications, but I want my Massachusetts certification as a *Local Inspector*. How do I achieve it?

Answer: Once you pass each part (exam) for whichever BOCA certification you choose, you merely apply to the Board of Building Regulations and Standards on the application attached to this document. If all is in order, you will be issued your certification as a Massachusetts certified *Local Inspector.*

Question: After passing the BOCA examinations, it costs additional monies to receive a certificate from them. Do I need to purchase this certificate or may I just submit my passing scores.

Answer: No, you do not need to purchase the BOCA certificate, unless you wish to maintain your BOCA certification. Submitting your passing scores with your application (along with all other required information), is fine.

Question: Ok, now I am certified as a *Local Inspector*, but I still need certification as an *Inspector of Buildings\Building Commissioner*. What do I do?

Answer: That's correct. You have only satisfied the first step in the two step process. Now you need to take the examinations required of the CABO's *Certified Building Official*, and that process is described on page two (2) of this document.

Question: This seems like a lot of work to complete within eighteen (18) months. Is there an extension period?

QUESTIONS - CONTINUED FROM PAGE 6

Answer: It is a great deal of work, and it is desirable for you to complete all the necessary exams within the required time frame. However, there is an extension process defined in 780 CMR-7. As long as you are diligently pursuing your certification, an extension may be granted by the Committee, in its discretion.

Question: Should I contact the BOCA (and\or CABO) organization for more information relating to these examinations as well?

Answer: Yes! Again, the phone number is (708) 799-2300 extension 334.

Regarding maintenance of certification:

Question: Earlier, you mentioned maintenance of certification. What is that?

Answer: In order to maintain your certification, you must complete at least forty-five (45) hours of acceptable continuing education credit for each three (3) year period following initial certification..

Attached to this issue is a document entitled: *the Standing Certification Committee's Policy for Maintenance of Certification Status*. This document clearly defines how one is to maintain his\her certification. Please read it carefully.

Question: Well, that's great. I think you have answered all my questions; except one. When will we be receiving some continuing education from the Board of Building Regulations and Standards?

Answer: I'm glad you asked that question. Because the Board is pleased to announce that it will conduct its first seminar applicable towards the maintenance of your certification beginning in January. **Therefore, January 1, 1994 will begin the three year clock for maintenance of certification status.**

CONTINUING EDUCATION - SEISMIC SEMINAR

The following registration form lists the dates, locations (along with directions) and times for the first Board of Building Regulations and Standards sponsored continuing education seminar. The seminar will be conducted by Mr. John C. Smith of the Massachusetts Emergency Management Agency (MEMA) and by Dr. Louis H. Klotz, P.E. of the New England States Earthquake Consortium (NESEC).

The seminar will focus on the mitigation of seismic hazards defined in Article 11, and MEMA's requirements for response in the event of a seismic emergency.

All those certified building code enforcement officials who are interested in attending this program should make a copy of the registration form, fill out all the necessary information (making sure you clearly indicate the location you wish to attend) and return it to the Office of the Board of Building Regulations Standards, attention Rob Anderson, no later than **Monday January 24, 1994**.

Please be sure to read and understand the Committee's policy regarding maintenance of certification status before attending this seminar, as we believe it answers all questions relating to the process. However, if confusion remains, we will be glad to address any question imaginable at the seminar.

As always, there is no charge to the building code enforcement official.

BOARD OF BUILDING REGULATIONS AND STANDARDS

Registration Form for Continuing Education

SEISMIC SEMINAR, 1994

Please choose the date and location of the seminar you wish to attend. The program offering is the same at all locations. The areas were chosen in order to make it as convenient as possible for all to attend.

Please return this form to the Office of the Board of Building Regulations and Standards, One Ashburton Place, Room 1301, Boston, MA 02108; attention Rob Anderson, no later than Monday, January 24, 1994.

I wish to attend (Check one):

- January 27, 1994 in Chicopee at the Chicopee City Hall Auditorium (directions below): ____
- February 7, 1994 in Falmouth at the Redfield Auditorium, Oceanographic Institute (directions below): ____
- February 15, 1994 in Bridgewater at the MEMA Area II Facilities (directions below): ____
- March 1, 1994 in Tewksbury at the Tewksbury State Hospital Auditorium (directions below): ____

Check-In will begin at 8:30 am for each seminar. At 9:00 am Rob Anderson will give an overview of the certification process, and answer any questions regarding the process. The program will begin thereafter.

Directions:

Chicopee: Take the Massachusetts Turnpike to exit 5 to Memorial Drive. Go over the bridge, and take a right turn onto Main Street. Then take the first left onto Grove Street, and proceed to City Hall on Front Street.

Falmouth: From Boston, Take the Southeast Expressway to Route 3 South. Follow Route 3 to the Sagamore Bridge. Go over the bridge and take the first right (Sagamore exit). At the end of the ramp, take a left at the lights onto Route 6A. Follow 6A, along the Cape Cod Canal, to the Bourne Rotary. Take third right off rotary (Falmouth\Woods Hole, Route 28). Follow Route 28 to Woods Hole (be sure to follow signs to Woods Hole). The Redfield Auditorium is located on Water Street.

Bridgewater: From 495 Southbound, take exit 6 (Route 44) and turn right to the Middleboro Rotary. From 495 Northbound take exit 5 (Route 18) and turn right to the Middleboro Rotary. Go around the Rotary and take Route 18\28 North toward Bridgewater. Proceed approximately 2 miles to a traffic light (Binky's restaurant is on the right). Take a right onto Plymouth Street. Then take the first left onto Titicut Street. Continue approximately 1 mile, then take a left onto Administration Road. Go a short distance to the Area II Emergency Management sign on the left and take a left. Proceed to a dirt road, past a large white antenna tower, and take a right into the paved parking area.

Tewksbury: Take Route 93 North to the Dascomb Road exit. Go West on Dascomb Road about 2½, following the signs to the State Hospital. The entrance to the hospital campus is on the left beyond Livingston Street. The auditorium is located in the first building as you enter the parking lot.

Submitted by: ______________________________

Certified as: ______________________________

Municipality: ______________________________

Signature: ______________________________

MORE INFORMATION REGARDING OFFICE ACTIVITIES - CONSTRUCTION SUPERVISORS LICENSES

a meeting of the License Review Committee (the Committee) of the Board of Building Regulations and Standards on ecember 1, 1993, three Construction Supervisor Licenses were suspended or revoked. All three involved violations of e Massachusetts State Building Code.

) The first hearing related to a complaint against Licensed Construction Supervisor, Martin Vierling of Norwell, license number 055660. Mr. Vierling was not present at the hearing to testify, although several registered letters were sent to his home.

Following testimony from the complainant, the License Review Committee found that Mr. Vierling had violated several provisions of the State Building Code, and voted to **revoke his license (#055660)** effective December 1, 1993.

) The second hearing related to a complaint against Licensed Construction Supervisor Robert V. Crowley of Needham, license number 045259.

Following testimony by the complainant and the license holder, it was found that Mr. Crowley had violated several provisions of the State Building Code. Therefore, the Committee voted to **suspend the license of Mr. Crowley (#045259)** until he retakes the Construction Supervisors Licensing examination (receiving a passing score). Upon successful completion of the exam, he may apply to the Board for re-instatement of his license.

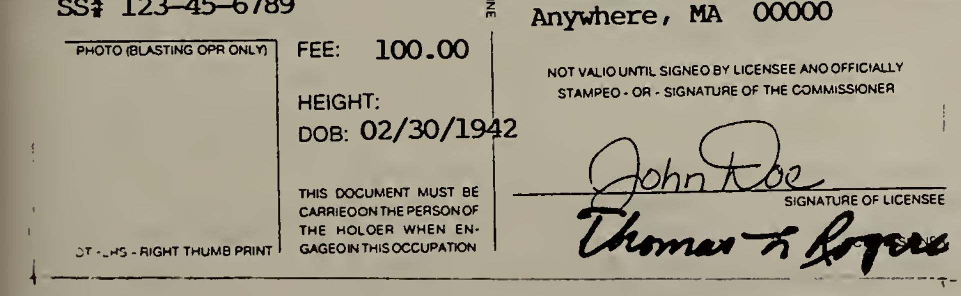
) The final hearing related to a complaint against Licensed Construction Supervisor, Lawrence White of Epson, NH, license number 028587.

Following testimony from the certified building code enforcement official, the complainant and the license holder, it was found that Mr. White had violated several provisions of the State Building Code. Therefore, the Committee voted to **revoke the license of Mr. White (#028587)**, effective December 1, 1993.

ll building code enforcement officials are advised to check the licenses of all Construction Supervisors to ensure that nese license numbers are not used.

PLEASE, MAY I SEE YOUR I.D.?

ı line with the above article, this office has received several complaints about unlicensed persons using the license umber of another individual. A building code enforcement official should always check the license of a construction upervisor and the registration of a home improvement contractor (when applicable) along with a picture identification ard, before approving a permit for issue. If each building official takes the time to properly check the credentials of those vho claim to be licensed or registered, these problems can be eliminated. A sample license and registration card is lustrated below. (Not actual size.)



COMMONWEALTH
OF
MASSACHUSETTS

EXPIRATION DATE 01/01/1996

RESTRICTIONS

NONE

SS# 123-45-6789

PHOTO (BLASTING OPR ONLY)

[illegible] - RIGHT THUMB PRINT

FEE: 100.00

HEIGHT:
DOB: 02/30/1942

THIS DOCUMENT MUST BE CARRIED ON THE PERSON OF THE HOLDER WHEN ENGAGED IN THIS OCCUPATION

FOLD ALONG LINE

DEPARTMENT OF PUBLIC SAFETY
ONE ASHBORTON PLACE
BOSTON, MA 02108

License
CONSTR. SUPERVISOR

EFFECTIVE DATE 01/01/1994

LIC-NO. 000000

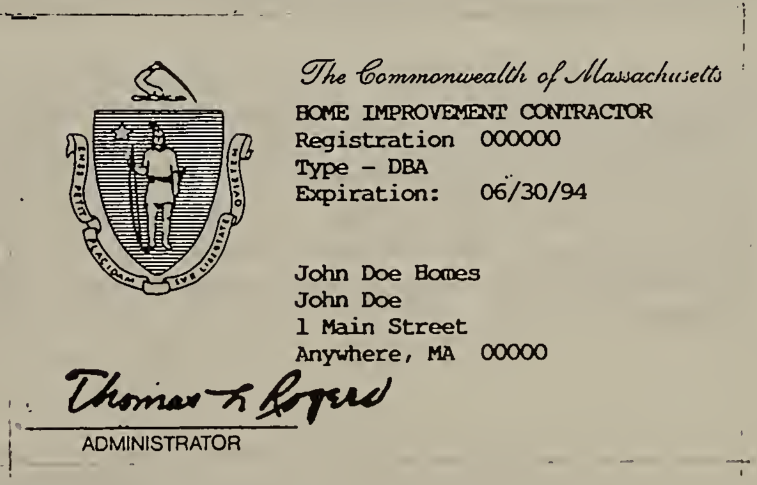
John Doe
1 Main St
Anywhere, MA 00000

NOT VALID UNTIL SIGNED BY LICENSEE AND OFFICIALLY STAMPED - OR - SIGNATURE OF THE COMMISSIONER

John Doe

SIGNATURE OF LICENSEE

Thomas L. Rogers



The Commonwealth of Massachusetts

BOME IMPROVEMENT CONTRACTOR
Registration 000000
Type - DBA
Expiration: 06/30/94

John Doe Bomes
John Doe
1 Main Street
Anywhere, MA 00000

Thomas L. Rogers

ADMINISTRATOR

NEW DISTRICTS FOR STATE INSPECTORS

Each Inspector of Buildings\Building Commissioners will find the last attachment to this issue of **CODEWORD** to be a listing of the newly assigned districts for each District State Building Inspectors employed by the Department of Public Safety. Also, on this list, is the office address and phone number of each inspector. If each Inspector of Buildings\Building Commissioner would make this information available to all Local Inspectors within his office, it would be greatly appreciated.

As a reminder, each District State Inspector is available to provide technical assistance to those municipal building code enforcement officials within his area. The District State Inspector should be the first source of contact in the event of any difficulty. (See attached letter from the Administrator to the Board for further information regarding this issue.)

CONCRETE TESTING LABORATORIES LICENSED TO OPERATE IN THE COMMONWEALTH (as of December 10, 1993)

Allied Testing Labs, Inc. 115 St. George Rd. Springfield, MA - CTL# 018	*Holmes & Geisser 120 Pershing St. East Providence, RI - CTL# 011*	*PSI-CWB Assoc. Division 905 Turnpike St. Canton, MA - CTL# 024*	*UTS of Mass., Inc. 5 Richardson Lane Stoneham, MA - CTL# 009*
American Engineering & Testing 14 Roc Sam Park Rd. Braintree, MA - CTL# 017	*R. J.Kenney Assoc., Inc. 72 Washington St. Plainville, MA - CTL# 002*	*PSI/PTL Division 12 Ashmont St. Worcester, MA - CTL# 031*	*Yankee Engineering & Testing, Inc. 10 Mason St. Worcester, MA - CTL# 032*
Boston Testing Inc. 1831 Broadway Saugus, MA - CTL# 030	*MBTA Mtls. Testing Lab. 170 Freeport St. Dorchester, MA - CTL# 005*	*Rosenfeld Concrete Corp., Testing Lab. 75 Plain St. Hopedale, MA - CTL# 019*	*Tibbetts Engineering Corp. 716 County St. Taunton, MA - CTL# 014*
Briggs Assoc., Inc. 400 Hingham St. Rockland, MA - CTL# 012	*MDC Mtls. Field Lab. 148 Newton St. Waltham, MA - CTL# 006*	*Soil & Material Testing Inc. 57 South Main Street Castleton, NY - CTL# 033*	*The Haller Testing Labs of MA 11A Walkup Drive Westborough, MA - CTL# 003*
Briggs Assoc., Inc. Deer Island 190 Taft Avenue Winthrop, MA - CTL# 040	*Mass. Port. Authority Mtls. Lab 239 Prescott St. East Boston, MA - CTL# 015*	*The Thompson & Lichtner Co., Inc. 111 First St. Cambridge, MA - CTL# 001*	*Miller Engineering & Testing, Inc. 130 East Main St. Northborough, MA - CTL# 023*
CA/T Construction Materials Testing Lab. Harding Building, 335 "B" St. Extension Boston, MA - CTL# 042	*Miller Engineering & Testing, Inc. 100 Sheffield Rd. Manchester, NH - CTL# 008*	*Trow-Protze Consulting Engineering 70 Jaconnet St. Newton, Highlands, MA - CTL# 024*	

Summary of Enforcement of regulations relating to Concrete Testing Laboratories licensed in the Commonwealth:

(1) Only the laboratories, at the specific addresses listed above, are currently considered certified in Massachusetts. Please pay particular attention, not only to the laboratory name, but also, the laboratory address!

(2) Concrete Testing Laboratories licensed to operate within the Commonwealth are governed by the provisions of 780-CMR-1, entitled: CONCRETE TESTING LABORATORIES LICENSING RULES AND REGULATIONS. These regulations are found at the back of the Fifth Edition of the Massachusetts State Building Code. Personnel conducting tests of concrete in these labs must possess a valid Class "A" Field Concrete Technician's License, and are bound by the provisions of 780-CMR-2, entitled: CONCRETE TESTING PERSONNEL LICENSING RULES AND REGULATIONS, also found at the back of the Code. Further to these regulations, Section 127 (Controlled Construction) of the Code requires licensing of laboratory facilities and personnel; therefore, when dealing with projects subject to the provisions of Controlled Construction, the Building Official has the right to request the Class "A" license numbers and license expiration dates of all those actually involved in the concrete testing, as well as request proof of laboratory certification.

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The Commonwealth of Massachusetts
State Board of Building Regulations and Standards

CODEWORD©

July, 1994

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GOVERNOR

KATHLEEN M. O'TOOLE
SECRETARY

THOMAS L. ROGERS
ADMINISTRATOR

GOVERNMENT DOCUMENTS
COLLECTION

OCT 28 1998

University of Massachusetts
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WHY ARE WE HERE ?

A few years ago, a vice-presidential hopeful expressed an amusing thought on national television. The words he spoke that night will probably be used to describe him for years to come. Those words: who am I, and why am I here?

As entertaining as this thought seemed at the time, it is probably something many of us contemplate, at least on occasion. In fact, we may wonder about many seemingly unanswerable questions; such as: why does the phone always ring when we sit down to eat dinner, or why does it always rain right after we wash the car.

Well, we will not attempt to answer these abstract questions. We'll leave that to the philosophers. But, we may be able to shed some light on other issues of interest, such as; just what is the Board of Building Regulations and Standards, what does it do, and where does it get its authority?

In previous issues of **CODEWORD** we have briefly examined these questions but, until now, a full explanation has never been presented.

Therefore, in an attempt to dispel the myths and promulgate the truth, we offer the following information.

THE STATE BOARD OF BUILDING REGULATIONS AND STANDARDS:

REGULATORY AUTHORITY:

The State Board of Building Regulations and Standards (BBRS) is established by **MGL c 143 § 93** and empowered to propose, adopt and amend rules and regulations relating to building construction, renovation, alteration, demolition, fire suppression and alarm systems mechanical systems (excluding plumbing and electrical) and the use and occupancy of all buildings and structures in the Commonwealth. The regulations are collectively known as the Massachusetts State Building Code (the ***Code***) and are applicable throughout the Commonwealth.

Municipalities are specifically prohibited from adopting local regulations which are more restrictive than required under the ***Code***, unless approved by the BBRS.

The ***Code*** is promulgated as Code of Massachusetts Regulation (CMR) 780.

COMPOSITION OF THE BBRS:

The BBRS has a statutory constitution and comprises of 11 members, 9 of which are appointed by the Governor and two of which are ex-officio.

Ex-Officio Members:

- The **State Fire Marshal** or his designee
- The **Chief of Inspections** of the Division of Inspections

Appointed Members:

- Registered **Architect**
- Registered **Structural Engineer**
- Registered **Mechanical Engineer**
- **Building Trades** Representative
- **General Contractor** of Commercial/Industrial Buildings
- **General Contractor** of One and Two Family Dwellings
- Head of a **Local Fire** Department
- **Inspector of Buildings in a Town**
- **Inspector of Buildings in a City**

The current edition of the ***Code*** is the 5th Edition and was promulgated on September 14, 1990. The 5th Edition is modeled after the 1987 version of the Building Official and Code Administrators International (BOCA) National Building Code.

It is the intent of the BBRS to adopt, with specific modifications for Massachusetts, the 1993 BOCA National Building Code in the latter part of 1995. Budgetary constraints however may force a delay into 1996.

ADVISORY COMMITTEES:

In order to assist in the development of areas of significant importance, the BBRS has established five standing committees. The committees are volunteer and are comprised of prominent professionals. Presently the committees are;

- **Seismic** Advisory Committee
- **Geotechnical** Advisory Committee
- **Loads** Advisory Committee
- **Fire** Prevention/Fire Protection
- Standing **Certification** Committee
- **Construction Materials** Safety Board

BUILDING CODE ENFORCEMENT:

Except for State owned buildings the ***Code*** is enforced at the local level by the city or town appointed ***Inspector of Buildings*** or ***Building Commissioner*** . The ***Chief Administrative Officer*** may employ other ***Local Inspectors*** as are reasonably necessary to assist in the discharge of his duties.

The minimum requirements of education or experience for appointment as a building official are defined in **MGL c 143 § 3**.

From 1975 until 1992, the minimum requirements established by law were either five years in the supervision of building construction or design, or a four year degree in a field related to building construction or design. In addition, a general knowledge of building materials, safe exits, light and ventilation and fire prevention were required of a prospective ***Inspector of Buildings*** or ***Building Commissioner***. The level of experience for a ***Local Inspector*** is the same; however, a two year degree in a field relating to building construction or design may be substituted for the required experience.

Chapter 168 of the Acts of 1992 amended **MGL c 143 § 3** which now mandates that all building officials be certified by the BBRS as either an ***Inspector of Buildings/Building Commissioner***, if head of the department, or ***Local Inspector***, if assisting the ***Inspector of Buildings.***

ORDERS, INTERPRETATIONS, ACTION OR INACTION OF A BUILDING OFFICIAL - THE ADMINISTRATIVE APPEAL PROCESS:

Anyone aggrieved by decisions, orders, interpretations, actions or failure to act of a building official may appeal those orders to the State Building Code Appeals Board, or to a local or regional building code (not zoning) appeals board, if one exists.

The State Building Code Appeals Board is a 3 member panel comprised of members of the BBRS. The Appeals Board holds hearings in accordance with **MGL c 30A**. In order to file for a hearing, an aggrieved party must file an appeal application no later than 45 days following the order of the building official or the right to both an administrative hearing and court hearing are forfeit.

Decisions, orders or interpretations of the Building Code Appeals Board do not establish precedent and, upon petition, may be reviewed by a court of competent jurisdiction (**MGL c 30A**).

PROPOSED SIGNIFICANT FUTURE CHANGES TO THE *CODE:*

Of the proposed upcoming changes, perhaps the proposed code change which will have the most effect is relate to seismic upgrading of existing buildings. However, other significant changes relating to Appendix A references for NFiPA Standards (which were adopted by emergency filing on June 14, 1994) are identified in an article further on in this document.

A brief historical development of the proposed change to Article 32 follows.

SEISMICITY IN MASSACHUSETTS:

From colonial times to the present, over 2500 earthquakes have been documented in the New England States. The largest significant earthquake in Massachusetts was epicentered in the Atlantic Ocean off Cape Ann in 1755. This earthquake had an estimated magnitude of 6.0 on the Richter scale.

Massachusetts is considered to be an area of "moderate" seismic risk. The term "moderate" refers to the period of time between major earthquakes, not the magnitude or effects of the earthquake.

Because of the geology of this region the effects of an earthquake will be felt over an area up to 40 times greater than an earthquake of similar magnitude in California. The "built environment" in Massachusetts is particular cause for concern during the next damaging earthquake.

Massachusetts has a large stock of older buildings, constructed prior to the adoption of the first state building code on January 1, 1975. Many of these buildings are constructed of unreinforced masonry, a known poor performer in earthquakes.

Today, good seismic design requirements mandate "ductile" (i.e. not brittle) buildings. Ductile structures are able to accommodate large displacements during earthquakes and in doing so dissipate much of the energy imparted during ground shaking.

THE BOSTON LOSS STUDY:

The Massachusetts Emergency Management Agency (formerly the Massachusetts Civil Defense Agency) commissioned a study to project the effects of an earthquake of Richter Magnitude 6.25 off Cape Ann. The results of this study are chilling. Damage estimates range from $2 to $10 billion in the Boston Metropolitan area due to ground shaking with additional losses due to secondary effects such as soil liquefaction failures, fires and economic interruptions. Hundreds of deaths and thousands of injuries are also predicted. An earthquake of magnitude 6.25 is considered a moderate size and the potential for larger, more powerful earthquakes exists and is real.

Recognizing the potential for serious losses to existing buildings and major life loss and personal injury during an earthquake, the Seismic Advisory Committee has invested four years in developing seismic regulations for the upgrading of existing buildings. The efforts of the committee culminated in proposed amendments to Article 32 which were submitted to the BBRS in September 1992 and heard at the semi-annual public hearing of November 1992.

In February 1993 the BBRS voted to adopt the proposed regulations conditional upon the completion of a review of the proposed changes by an independent structural engineer with particular concern being addressed to the feasibility and economic impact of the regulations. The study analyzed five existing buildings which had recently been renovated and identified the additional requirements which would be imposed under the proposed regulations. The study was completed on February 17, 1994 and concluded that;

- The provisions effectively achieve the aim of reducing the risk of loss of life by concentrating on specific areas of high risk resulting from seismic weakness or specific occupancy.

- The provisions remove the unusually unreasonable requirement to design [existing] buildings to meet the code for new construction.

- The proposed provisions are much more specific and clearer than the existing provisions.

- The new provisions will increase both design and construction costs by a small amount.

- In four of the five buildings studied, the total cost of lateral load retrofit work was 3% or less of the total construction cost. The fifth building incurred 12% costs associated with lateral load retrofit, but this was already required by existing code provisions. Additionally this building was seismically very weak.

- The majority of buildings will incur additional construction costs of 1% over present costs without the new regulations in place.

- Design fees will increase between 10% and 25% depending on the project overall size.

When promulgated, these regulations will make Massachusetts the first state in the union to promulgate regulations relating to the seismic upgrading of existing buildings. The regulations are scheduled to the promulgated in September/October, 1994.

All municipal building officials will receive a copy of the amendments via US mail as soon as they become available. All other interested parties may obtain a copy from the State House Bookstore (617) 727-2834. Again, the amendments will not be available until September or October.

QUESTIONS AND ANSWERS ON THE REQUIREMENTS FOR THE SEISMIC UPGRADING OF EXISTING BUILDINGS:

1. Will the proposed regulations applied retroactively in a similar manner to **MGL 148 § 26A1/2** ?

No. **MGL c 143 § 92** prohibits the application of *the Code* retroactively. Special legislation would be required (e.g. **MGL c 148 § 26A$^{1/2}$**) in order to require new code provisions to be applied to lawfully existing buildings.

2. Under what circumstances do the proposed regulations require an existing building to be seismically upgraded ?

(a) **Additions:**

(i) **Additions which are structurally separate** from the existing building must meet the code for new construction, including ductility requirements.

(ii) **Additions which are not structurally separate from the existing building**;

If both weight and area of the addition are less than 10% of the original building - lateral load capacity cannot be altered without a structural analysis.

If either the weight or area are increased in the range 10% to 100% - investigate for special earthquake hazards (parapets masonry walls not tied into floors; pre-cast concrete elements; analyze the building and strengthen structural systems where necessary on a sling scale depending upon the height or weight of the addition. Modified "K" factors may be used to account for buildings which do not meet the ductility requirements for new construction.

If the weight or area is greater than the existing building, the building must be seismically upgraded to meet new construction requirements, including ductility requirements.

(b) **Changes in Use:** When a building is changed from one use group to another, the increase (or decrease) in the **Seismic Hazard Category** must be ascertained. Seismic hazard category is based on factors such as increase in occupancy of more than 25% or total cost of alterations greater or less than 50% of the assessed value of the building. Seismic Hazard Categories range from 1 to 3 (1 being the lowest 3 being the highest).

(i) **Seismic Hazard Category 1:** Alterations to existing lateral load capacity subject to structural analysis.

(ii) **Seismic Hazard Category 2:** As Seismic Hazard Category 1, additionally investigate special seismic hazards.

(iii) **Seismic Hazard Category 3:** Full compliance with seismic requirements except if building is not ductile, modified "K" factors may be utilized.

OTHER SIGNIFICANT FUTURE CHANGES TO THE MASSACHUSETTS STATE BUILDING CODE:

MGL c 143 § 94(h) mandates that the ***Code*** be amended at least every five years. The 5th Edition of the Code was promulgated on September 14, 1990. Presently, the Board, its Staff and its Advisory Committees are studying the 1993 BOCA International Uniform Building Code with a view of adopting a modified version in 1995/1996.

We hope that the above narrative has answered some of the questions you may have had concerning the Board, its composition and its powers and duties, and just why we are here.

OTHER ACTIVITIES OF INTEREST

CERTIFICATION:

SEISMIC SEMINAR:

Many of you were able to attend the first seminar applicable towards certification maintenance. The seismic seminar, sponsored by the Board of Building Regulations and Standards and presented by the Massachusetts Emergency Management Agency (MEMA) and New England States Earthquake Consortium (NESEC) was a great success. The Board hopes to follow with one or two more seminars in calendar year 1994.

For those who have not received a certificate of attendance for this seminar, don't worry, they will be sent out before the end of the summer.

OTHER COURSES APPLICABLE TOWARDS CERTIFICATION MAINTENANCE:

The *Standing Certification Committee* has been busy reviewing courses and seminars that have been submitted for credit towards certification maintenance.

COURSES - CONTINUED

The following is a list of approved courses with the assigned credit value. All certified building code enforcement officials are reminded that their certification status **must be maintained** in accordance with regulations promulgated by the Board. Refer to the ***Standing Certification Committee's Policy for Maintenance of Certification Status*** for exact details.

COURSES AND SEMINARS APPROVED FOR CREDIT AS OF JUNE, 1994

NAME OF COURSE OR SEMINAR	**CONTACT HOUR CREDIT**
BBRS SPONSORED:	
"Seismic Seminar '94" as presented in Chicopee, Falmouth, Bridgewater and Tewksbury - January through March, 1994	5.0 Hours
BOCA SPONSORED:	
"Solving Means of Egress Problems in Commercial Structures"	5.0 Hours
"BOCA National Building Code Update\1993"	5.0 Hours
"BOCA National Mechanical Code Update\1993"	2.5 Hours
"BOCA National Residential Mechanical Code Update\1993"	3.5 Hours
"BOCA National Fire Prevention Code Update\1993"	3.5 Hours
"Non structural Pan Review\1993"	10.0 Hours
"Structural Plan Review\1993"	10.0 Hours
"Hazardous Materials Code Requirements\1993"	5.0 Hours
"Chapter 9 - Fire Protection Systems\1993"	5.0 Hours
"Special and Mixed Uses\1993"	5.0 Hours
"Three Options for Mixed Uses"	2.5 Hours
"Earthquake Design Requirements"	5.0 Hours
"Wind Load Review for Commercial Buildings\1993"	2.5 Hours
"Sprinkler Plan Review\1993"	10.0 Hours
"Creative Effective Oral Presentations"	2.5 Hours
"CABO One and Two Family Dwelling Code"	10.0 Hours
"Special and Mixed Uses" As presented at Albert's Restaurant, Stoughton - January 27, 1994	4.5 Hours
Other Courses (Various Sponsors):	
"Understanding the Massachusetts State Building Code" as offered at Northeastern University	10.0 Hours
"New England Municipal Building Officials Seminar" as offered at the University of Massachusetts, Amherst campus - October 4-7, 1993	10.0 Hours
"Americans With Disabilities and the Massachusetts Architectural Access Board's Regulations" as presented at the Holiday Inn, Worcester - December 15-16, 1993	5.0 Hours

COURSES AND SEMINARS APPROVED FOR CREDIT AS OF JUNE, 1994

"What Managers Do" and "Communication Skills for Managers" as offered at Middlesex Community College	10.0 Hours (Total)
"Energy Crafted Homes" as offered at the Eastern Utility Plant, W. Bridgewater - June 22-23, 1993	2.0 Hours
"Solid Flue Chimney Savers" as offered at the Ramada Inn, Portsmouth, RI - February 24, 1994	3.5 Hours
"Fire Alarm Systems" as offered by NFPA	10.0 Hours
"Automatic Fire Alarm Sprinkler Systems" as offered by NFPA	10.0 Hours
"Eastern States Building Officials Federation - Forty-Fifth Annual School"	10.0 Hours
"Hurricane Design and Emergency Response Planning" as offered at the Sturbridge Host Hotel, Sturbridge - May 20, 1994	6.0 Hours
"Principals of Means of Egress" as offered at the Seacrest Conference Center, North Falmouth - May 18, 1994	6.0 Hours
"Public Safety Roundtable Discussion" as offered at the Casa DiFiore, Wilmington - April 28, 1994	2.0 Hours

HOME IMPROVEMENT CONTRACTOR REGISTRATION

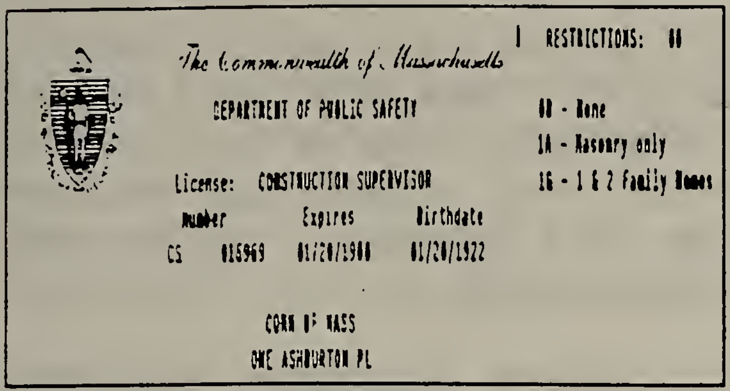
The Home Improvement Contractor Registration (HIC) program is entering into its first renewal cycle. The Board expects to receive approximately 12,000 renewal applications over the summer. Presently, we are slightly behind schedule in issuing renewed registrations, but we expect to catch up as the summer progresses.

As a reminder, all building officials should always examine the registration card of a Home Improvement Contractor along with a picture I.D. before issuing a permit for work covered by the program. For details regarding the program, reference 780 CMR-6, *"Rules and Regulations for Registration and Enforcement of Home Improvement Contractor Program"*.

CONSTRUCTION SUPERVISORS LICENSE

The construction supervisors license will soon be sporting a new look. The new license card will be smaller in size for a better wallet fit. Also, the license will be more easily laminated. An example of the new card is illustrated on the following page.

SUPERVISORS LICENSE - CONTINUED



The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC SAFETY

License: CONSTRUCTION SUPERVISOR

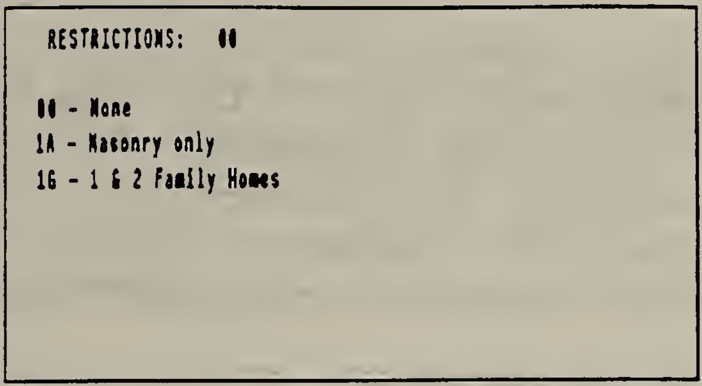
Number		Expires	Birthdate
CS	015969	01/20/1900	01/20/1922

COMM OF MASS
ONE ASHBURTON PL

RESTRICTIONS: 00

00 - None
1A - Masonry only
1G - 1 & 2 Family Homes

FRONT



RESTRICTIONS: 00

00 - None
1A - Masonry only
1G - 1 & 2 Family Homes

BACK

As with the HIC registration card, a building official should always take care to examine an individual's construction supervisors license along with a picture I.D before issuing a permit for work covered by the program.

CONSTRUCTION SUPERVISOR LICENSING AND BUILDING CODE ENFORCEMENT OFFICIAL CERTIFICATION - TEST DATES

The following is a list of dates for upcoming construction supervisor licensing examinations:

Registration Deadline	Test Date	Scores Mailed
August 12, 1994	September 10, 1994	October 7, 1994
November 11, 1994	December 10, 1994	January 6, 1995

The following is a list of dates for upcoming certification examinations:

BOCA TEST DATES FOR CERTIFICATION AS A LOCAL INSPECTOR:

Registration Deadline	Test Date
July 14, 1994	August 20, 1994
October 13, 1994	November 19, 1994
March 16, 1995	April 22, 1995

CABO TEST DATES FOR CERTIFICATION AS AN INSPECTOR OF BUILDINGS\BUILDING COMMISSIONER:

Registration Deadline	Test Date
September 22, 1994	November 5, 1994

MUNICIPAL BUILDING DEPARTMENT REVIEW

A NOTE FROM THE CHIEF OF INSPECTIONS - THOMAS L. ROGERS

All inspectors of buildings\building commissioners should have received a copy of the Department of Public Safety's Policy #94-01 with the December, 1993 issue of **CODEWORD**. The policy explains that Massachusetts General Law (MGL) **c 143 s 3A** requires the state inspector, through the chief of inspections, to perform a review of all municipal building departments.

In the aftermath of the devastation caused by Hurricane "Andrew" in 1992 during which 375,000 people are reported to have lost their homes, many of South Florida's municipal departments were criticized for lax code enforcement. In addition to the misfortune suffered by homeowners, insurance carriers also incurred large financial losses.

In response to this and other disasters resulting in large property and life loss, the insurance industry of America is implementing programs whereby all municipal building departments are assessed and graded.

MGL c 143 s 3A establishes a similar inspection process for use in the Commonwealth. The Chief of Inspections hopes to examine the activities of each department in order to develop criteria in which to prescribe adequate staffing levels for building departments, offer methods of improving building permit and inspection procedures, and suggest alternatives for records keeping procedures.

The goal of the inspection is to establish a uniform process under which all building departments may function. With this standardization, citizens of the Commonwealth will be better served, building departments will operate more efficiently and the safety of the public will be better protected.

The process will be lengthy, but the benefits will be vast. The Chief looks forward to working with each department, and expects to learn as much from the process as anyone.

With this process in place, each building department should fare well during the upcoming insurance industry review.

EMERGENCY ACTION

Earlier in this document we described the amendment process and explained that a series of amendments will be issued towards the end of the summer with respect to seismic retrofit issues. These amendments were developed through normal public hearing

EMERGENCY ACTION - CONTINUED

procedures. However, there is another method by which amendments may be adopted. It is known as emergency action procedures.

As the title may indicate, amendments developed and issued under emergency action are considered extremely important measures that must be immediately enacted in order to ensure the public good. The amendments issued here pertain to Appendix A of the code; specifically, the NFiPA reference standards.

Reference standards are an integral part of the code. Since the code is prescriptive in nature, it tells us what to do, not how to do it. For instance, Section 1002.2 specifies that a fire suppression system is required to be installed in all buildings of Use Group A-1, but it does not speak to how the system is to be installed. In order to learn this, one must refer to the applicable NFiPA standard (NFiPA 13) identified in Appendix A. However, many of the NFiPA standards identified are out of date and sometimes unavailable.

Consequently, in attempting to layout a sprinkler system, a designer is faced with a dilemma; do I use the latest NFiPA 13 standard, violating the provisions of the building code; or do I hunt down the standard referenced in the appendix and design the system in accordance with a potentially antiquated method?

Obviously, this caused a great deal of confusion among design professionals. In an effort to rectify this situation, the Board, at its May, 1994 meeting, voted to amend all NFiPA reference standards; updating them to the latest edition.

Enclosed, all municipal building and fire official will find a copy of the changes. Other interested parties may obtain a copy of the changes from the State House Bookstore (617) 727-2834.

OPINIONS OF THE BOARD

This is a new feature of **CODEWORD**, called ***Opinions of the Board***. It will be a regular part of future issues, and will attempt to answer some of the many questions we receive on a day to day basis. Although it cannot be considered an *Official Interpretation* of the Board, it should be taken for what its is; good advice. (Municipal building and fire officials will find recent copies of Official interpretations rendered by the Board. Other interested parties may request copies by contacting the office. A fee must be assessed in order to cover printing and mailing.)

Question: Is it the intent of Section 3401.11 of the Fifth Edition of the code to require ***both*** handrails and guardrails on the open side of stairs in single and two family dwellings.

Answer: No. The language of this section states (in part) that a stair shall have ". . . Handrails having minimum and maximum height of thirty (30) inches and thirty-four (34) inches, respectively, measured vertically from the nosing of the treads [and] . . . Open sides of all stairs shall be ***similarly*** [emphasis added] protected by guards.

It is the opinion of the Board that the word similarly refers to the handrail description. Therefore, in erecting a set of egress stairs in a single or two family home, one needs only to provide a guardrail\handrail on the open side conforming to the stated dimensions. It is ***not*** necessary to provide a guard set at thirty-six (36) inches with an additional handrail set between thirty (30) and thirty-four (34) inches.

FINALLY

The Executive Office of Public Safety has announced that Secretary Thomas C. Rapone has decided to leave state government. Mr. Rapone has served the Commonwealth admirably for three (3) years as Secretary. His work has been widely complimented by members of both the public and private sectors. He is leaving to pursue a career in consulting.

All at the Board of Building Regulations and Standards (Board) and the Department of Public Safety (Department) wish Mr. Rapone great success in his future endeavors.

The Governor's Office has also announced the successor to Secretary Rapone; Ms. Kathleen M. O'Toole, Lieutenant Colonel of the Massachusetts State Police.

Ms. O'Toole has worked as a law-enforcement official for fifteen (15) years, including service as Superintendent with the Metropolitan Police and service with the Boston Police Department.

Ms. O'Toole is also a practicing attorney. Her education includes a Juris Doctor degree from the New England School of Law, and a Bachelor of Arts degree from Boston College.

All at the Board and the department welcome Ms. O'Toole to the agency and look forward to working with her.

EDITOR IN CHIEF Rob Anderson
SUPERVISING EDITOR Brian Gore, P.E.
OTHER CONTRIBUTING STAFF Ken Lucas
Tom Riley

MASS. BRS1.3: 995/Apr

The Commonwealth of Massachusetts
State Board of Building Regulations and Standards

CODEWORD

April, 1995

William F. Weld
Governor

Kathleen M. O'Toole
Secretary

Thomas L. Rogers
Administrator

GOVERNMENT DOCUMENTS COLLECTION
OCT 28 1998
University of Massachusetts
Depository Copy

UNIFORMITY OF ENFORCEMENT

By Rob Anderson

Chapter 802 of the Acts of 1972, as amended, in conjunction with Massachusetts General Law (MGL); c 143 §§ 93 - 100, legally empowered the Board of Building Regulations and Standards (the Board) to produce a document to be called *the State Building Code* (the code).

The code establishes **uniform** standards pertaining to structural and life safety issues for the construction and alteration of *all* buildings and structures in the Commonwealth. The first edition of the code came into effect on January 1, 1975. The current (fifth) edition has been in effect since September 14, 1990.

The code is a *legal document* and must be enforced fairly and uniformly in each municipality.

Prior to the implementation of the code, every city and town operated under a different set of building regulations. A building that was erected legally in one town may have been totally illegal in another. Obviously, this caused great confusion for all involved in building construction and design during this period.

Fortunately, today (and for the past twenty, some years) one is not faced with such conflicting regulatory language; or is he?

Since the code is a *"living"* document (i.e.; it changes as technology progresses), its contents are often open to debate and interpretation. It is intended that the language of the code is clear and easily enforced, but, it is also recognized that, at times, a particular provision may appear to defy logic.

Authorized to enforce the code, a municipal building official has the right to interpret (but not vary) provisions of the code. At times, this can lead to inconsistency, since all officials may not necessarily interpret the same section in the same manner. To avoid this, the Board encourages interaction among municipal inspectors, both through meetings of the three building officials associations, and through meetings of the District State Inspectors.

It is important to keep the lines of communication open within these forums, and to encourage the participation of all inspectors, at all levels. If a particular section (or sections) of the code proves troublesome, each group is encouraged to pursue instituting a code change by filing a *code change proposal* (forms are available at the Office of the Board). Through this process a change is considered at a public hearing and voted on by the full Board. Often, the code is significantly improved by a simple suggestion set forth through this process.

The Board of Building Regulations and Standards is committed to working with each of the building officials associations and each District State Inspector to bring quality education to every building official in the Commonwealth. The seminar schedule illustrated further on in this document is evidence of this commitment. Through education it the board's goal is to ensure that the provisions of the code are understood and are equitably enforced across the state. Like technology, our thought process should advance with the passage of time; it should not return to the ways of the past.

Reportedly, a popular phrase prior to the enactment of the building code was: "*I don't care how they do it in that town, that's not the way we do it here*". This statement is very intimidating and extremely confusing to the person standing on the other side of the counter in the building department. If nothing else, we hope the adoption of a uniform code has eliminated this phrase from the vocabulary of municipal building officials. Working together, we may be able to eliminate the confusion that leads to such a response.

Understanding the ***true intent*** of the code ensures better service to all who use it and all who are governed by its provisions.

"If an opinion is general, it is usually correct."
Jane Austen (1775-1817), English Novelist

UNDERSTANDING EVALUATION REPORTS

BY BRIAN GORE, PE

Now that we have examined the intent of the state building code, it is time to look at a second issue. What happens when the code does not provide explicit guidance on a particular issue.

In general, building codes specify either ***performance*** or ***prescriptive*** criteria which must be met when designing or constructing a building, building component or building system.

Prescriptive provisions dictate exact requirements which must be met. An example of a ***prescriptive*** requirement is identified in Table 3405-6, where the minimum dimensions for a column footing are stated (or ***prescribed***) as 30" by 30" by 10" deep.

Performance criteria specify how a building component or system must behave under defined conditions. For example, consider the code ***performance*** requirements governing the design of a floor joist for use in a single-family dwelling.

Floor joists (a common ***sawn lumber*** product) are required to ***perform,*** such that the bending stresses and deflections do not exceed the prescribed safe limits for a given span and a given loading condition.

Tables 3403-8 (A through D) of the *One- and Two-Family Dwelling Code,* show values for allowable bending stress for floor joists, identified as ***Fb*** in the tables, and for the modulus of elasticity, identified as ***E.*** These values are given for every lumber grade and species. Once the grade and species of lumber have been selected, the allowable bending stress can be identified. It then becomes relatively simple to select a floor joist size from the appropriate table. Completing this exercise ensures that the code's ***performance*** criteria relating to limits on maximum bending stress and maximum deflection are satisfied.

Laminated lumber, such as parallam® is a common alternative to a sawn lumber product. Parallam® has higher allowable bending stresses and ***E*** values than most commonly available sawn lumber products and can therefore be used on larger spans than sawn lumber of equal size.

Tables 3403-8 (A through D) do not include values for allowable stresses or modulus of elasticity for laminated lumber. How then, does a building official approve the use of this (or any other) material not specifically defined in the code? And, how does the building official assure that the material ***performs*** to the code requirements?

In such an instance, the building official may accept either a ***BOCA ES "Evaluation Report"*** or a ***National Evaluation Service, "National Evaluation Report" (NER),*** in accordance with administrative procedures identified in Sections

110.5 and 1301.1 of the code. It is important to remember that neither the *BOCA ES* report nor the *NER* report constitute an approval of a building material, component or system. Rather, it provides the building official or other code user with an objective, third party analysis specific to the requirements of the BOCA National Building Code. Consequently, each report is a valuable tool for use in the review process for building code compliance.

The manufacturers of parallam® have submitted a report to the National Evaluation Service, Inc., for examination in which they have evaluated the product for conformance to the BOCA National building code. *NER-292* is enclosed with this document, for reference. It is important to note that the date of this report is May 1, 1993. The report is subject to re-examination in one year (i.e. April 30, 1994). This report illustrates the need for the official also ensure that the report is current. This particular report is enclosed as for illustrative purposes only and, should not be considered to be acceptable to the building official since it is outdated.

NER-292 is structured as follows (reference *NER-292*):

Name: of the product and the property for which the evaluation is sought (in this report, evaluations are sought for structural use and Fire resistive construction - this article limits discussions to structural).

Description: of the product, including material properties.

Installation: Structural calculations and drawings shall be made available to the Building Official. (Note that the material shall be installed in accordance with *NER-292*).

Identification: Labeling of material and reference to *NER-292*.

Evidence Submitted: test lab reports, engineering calculations, etc. (to allow the National Evaluation Service to adequately review)

Conditions of Use: Note that condition number two in *NER-292* allows the building official to require a Registered Design Professional (1) to prepare and seal the design using this product. Products such as parallam® are engineered products which require engineering judgment in their design, selection and use. They are not prescriptively addressed in the State Building Code, in the BOCA National Building Code, nor in the CABO One and Two Family Dwelling Code.

Also, it is important to note that the report shows that the material satisfies the requirements of either the BOCA or CABO Codes - the material may not necessarily satisfy the requirements of the Massachusetts State Building Code.

NER-292 has been reproduced by kind permission of the ***National Evaluation Service , Inc.***

Footnote:

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(1) 780 CMR 113.7 is the authority by which a building official may require adequate details of structural work be provided with an application to perform work on any building. Said section is consistent with MGL c 112 §§ 81D-81T in requiring such details and computations be performed by a registered professional engineer(or architect).

ALL THINGS - CERTIFICATION

ALL ARTICLES ON CERTIFICATION

BY ROB ANDERSON

THE FIRST YEAR

The legislation requiring certification of building code enforcement officials became effective on November 12, 1992, by the enactment of Chapter 168 of the Acts of 1992.

Following this date, there was a period of time during which the Board (through its *Standing Certification Committee*) was absorbed in writing regulations (780 CMR-7); reviewing applications for certification under the grandfather clause; issuing certificates and; accrediting course material These time consuming procedures occupied over a year of the Board's time. In fact, much of the work continues today, and will continue for the life of the program. Therefore, the period between January 1, 1994 and December 31, 1994 marked the

first full year during which the program was in full force and effect. It also marked the beginning the first three (3) year education cycle for those who were certified under the provisions of the grandfather clause.

The program has made great strides. As of the date of this publication, the Board has certified a total of **653** building code enforcement officials, 630 through the grandfather clause and 23 through the examination process. Forty-three (43) other officials are in the process of becoming certified through the examination process.

The Board is extremely encouraged by this progress, and wishes to thank the members of the *Standing Certification Committee* for their efforts, and all others who have helped with the program's success.

OF NOTE

The Board wishes to recognize Mr. Robert (Bob) Bersani, Building Commissioner for the City of Cambridge, as the first in a class.

Bob was appointed to the position of Building Commissioner for the city on March 15, 1993. Since Bob was not in office on November 12, 1992, he was not eligible for certification under the provisions of the grandfather clause. Consequently, he had to gain his certification by examination. By November, 1993, Bob had taken and passed all examinations required of him to become certified as an *Inspector of Buildings\Building Commissioner,* the highest category recognized by law.

This accomplishment distinguishes Bob as the *first* conditional appointee (as identified in 780 CMR-7, s 1.7) to brave the *entire* examination process. The fact that he was able to do so within eight months (leaving ten months to spare) makes his achievement more outstanding.

We wish to congratulate Bob for his work, and wish him much success in all future endeavors in his role as a ***certified building code enforcement official.***

ALSO OF NOTE

Although Bob was the first ***conditional appointee*** to complete the ***entire*** examination process, others have taken part or all of the exams necessary to become certified for the first time, or to upgrade their level of certification status. In future issues of ***CODEWORD,*** we will recognize individual achievements. For now, the Board wishes to, collectively, acknowledge the efforts of these dedicated professional, and wishes to encourage others to follow suit.

REPORT OF A CONDITIONAL APPOINTEE

The previous article mentions the term, *conditional appointee*. Hopefully, this term is familiar to all; but just in case, we will repeat its definition.

Simply put, a *conditional appointee* is a ***qualified*** individual who has been appointed to fill the position of municipal *Inspector of Buildings\Building Commissioner* or *Local Inspector,* but who is not certified. 780 CMR-7, the *Rules and Regulations for the Certification of Inspectors of Buildings, Building Commissioners and Local Inspectors* defines the term more specifically, and instructs the reader as to the duty of the appointee as well as to the duty of the local appointing authority.

Section 1.7.1 of 780 CMR-7 states, in part, that "*After November 12, 1992, no individual shall be permanently appointed to the position of inspector of buildings, building commissioner or local inspector . . . unless that individual has been deemed qualified and certified . . . by the Standing Certification Committee*".

Also, Section 1.7.2 states "*Immediately upon the appointment of an inspector of buildings, building commissioner or local inspector, the appointing authority shall notify the BBRS* [Board of Building Regulations and Standards] *in writing on forms provided for such purpose of the name of the appointee, the appointed position and the date of appointment*". Section 1.7.5.1 establishes further criteria for the conditional appointee (refer to document). The reason one must report the appointment of a conditional appointee to the BBRS, is twofold.

First, although it is ultimately the responsibility of the appointing authority at the municipal level to ensure that an individual meets the minimum qualifications defined by Massachusetts General Law (MGL) c 143 § 3 *prior to* appointing a person to the position of building code enforcement official, the BBRS also bears the responsibility of certifying these credentials. Therefore, the Board *must* be informed of each conditional appointee in order to verify that his\her qualifications meet the minimum required by law.

Second, a conditional appointee must attain certification by exam within eighteen months of his\her date of appointment. The date of appointment serves as the start of this cycle.

The Board requires each municipality to report the appointment of all new building code enforcement officials on "*forms provided for such purpose*". On February 28th, the Board forwarded a copy of the ***Standing Certification Committee's New Employee Report*** to the office of each and every city and town clerk. An additional copy is attached to this document (building officials, only). Please maintain a supply at the office of the building department for use in the future.

BBRS SPONSORED SEMINARS OFFERED IN 1995

NOTE: Except for the course identified as ***Joint Fire\Bldg. Officials*** training in the Table 2, these courses are ***only*** available to ***certified building code enforcement officials*** or ***conditional appointees***.

The ***Standing Certification Committee's Policy for Maintenance of Certification Status*** defines exactly how one ***must*** preserve his\her certification. Part 2 of this document identifies acceptable continuing education. Point 1, under this section defines education sponsored by the Board of Building Regulations and Standards. The Board was unsuccessful in meeting its obligation for education credit in calendar year 1994; but is determined to fulfill its duty for 1995. To this end, the Board has developed a schedule of events. The schedule identifies two types of courses of education.

The first type, identified in *Table 1*, is a course and\or seminar sponsored by the Board, that is presented at each of the municipal building officials associations. Any certified building code enforcement official or conditional appointee wishing to attend an association seminar ***registers directly through the association***. (These offerings began on March 30, 1995 and continue as identified. Other courses may be offered as the year progresses.)

The second type, identified in *Table 2*, is a course and\or seminar sponsored ***and*** presented by the Board, generally in at least four locations statewide. Each certified building code enforcement official or conditional appointee shall receive a registration form for these seminars at least one month in advance of the scheduled date. The registration form will identify date, time and location of each seminar.

(A registration form for the ***ATC 20 Training*** was forwarded to all eligible parties on March 29, 1995.)

BOARD SPONSORED EDUCATION PRESENTED AT THE ASSOCIATIONS

Education sponsored by the Board and offered through the associations is identified in the *Table 1*. The topic of this seminar is ***Section 127.0***, of the Fifth Edition of the building code, titled; ***Construction Control***.

Certified building code enforcement officials and conditional appointees wishing to attend such seminars ***register through the associations***. Please ***do not*** attempt to register through the Office of the Board.

HOW ARE YOU MEASURING UP ?

Included in this issue is the BBRS record of all certified building officials' individual hours of continuing education credit **through December 31, 1994**. Should you find any discrepancies between the BBRS records and your own, please write the Certification Committee.

TABLE 1 - BOARD SPONSORED EDUCATION - PRESENTED AT THE ASSOCIATIONS - 1995

Date	*Location*	*Association*
March 30th	Kitty's, North Reading	Mass Bldg. Commissioners and Inspectors Association (MBCIA)
April 12th	Christos II, Brockton	Southeastern Mass. Bldg. Officials (SEMBOA)
April 19th	Heidi's Restaurant S. Hadley	Building Officials of Western Mass. (BOWM)

Notes On Table:

1. This seminar is assigned two and one-half contact hours (2½) of credit.

EDUCATION SPONSORED AND DELIVERED BY THE BOARD

Education sponsored and delivered by the Board is identified in the *Table* 2, below. Exact dates and locations will be announced for the September and November seminars. Registration forms for these seminars will be forwarded to all eligible parties approximately one (1) month in advance of the seminar. (A registration for the *ATC 20 Training,* was forwarded to all eligible parties on March 29, 1995.)

TABLE 2 - BOARD SPONSORED AND DELIVERED EDUCATION - 1995

Month	*Length*	*Location*	*Topic*
April\May	Full Day	See registration form	ATC 20[2] Training
September	Full Day	To be announced[1]	HIC and Other Regs.[3]
November	Full Day	To be announced[1]	Joint Fire\Bldg. Official[4]

Notes On Table:

1. Each course will be offered in at least four (4) different locations, covering the same material. Dates and locations shall be announced on the registration forms.
2. ATC 20 Training is intended to set guidelines and procedures for post earthquake safety evaluation of buildings and structures. The event is sponsored, jointly by the Board and the Massachusetts Emergency Management Agency (MEMA). Attendees of the course may choose to be deputized by MEMA for service in the event of a seismic disaster. This seminar has been assigned seven and one-half contact hours (7½) of credit
3. HIC and Other Regs. will focus on the proper implementation and enforcement of the Home Improvement Contractors Registration Program and the other six (6) special regulations made part of the code (780 CMR-1 - 7).
4. Joint Fire\Bldg. Official will be conducted for the benefit of both fire and building officials who inspect buildings and structures for matters of life safety. The course will focus on egress requirements of the code (780 CMR).

OTHER COURSES APPROVED BY THE STANDING CERTIFICATION COMMITTEE

The July, 1994 issue of CODEWORD (pages 9 & 10) identified courses and seminars approved for credit by the *Standing Certification Committee* up to June, 1994 *Table 3* is a list of courses and seminars approved from June, 1994 to March, 1995. Once a course or seminar is approved by the committee, the contact hour value applies, regardless of where or when the course is taken, as long as the course material does not change significantly.

TABLE 3 - ACCREDITED COURSES AND SEMINARS

COURSES AND SEMINARS APPROVED FOR CREDIT FROM JUNE, 1994 TO MARCH, 1995:

NAME OF COURSE OR SEMINAR	CONTACT HOUR CREDIT
BBRS SPONSORED:	
"Joint Training of Fire Officials and Building Officials in the Administration and Enforcement of the Massachusetts State Building Code", as presented in Springfield, Northampton, Middleton, Stow, Middleboro and Boston, November - December, 1994	3.0 Hours
BOCA SPONSORED:	
"Wind and Flood-Resistant Construction"	10.0 Hours
"the Annual Conference" offered at the Hyatt Hotel Dearborn, MI, September 19, 1994:	
"the Five Points of Key Performance"	2.0 Hours
"Customer Service for Code Officials"	2.0 Hours
"Providing Accessibility: Building Code vs. Civil Rights Approach"	2.0 Hours
"Engineering Principles for the Wood Frame House	2.0 Hours
"Chapter 16: Ventilation (BOCA National Mechanical Code\1993)	2.0 Hours
"Governmental Demolition of Dangerous Structures"	2.0 Hours
"BOCA National Energy Conservation Code"	2.0 Hours
"Hazardous Materials Code Requirements in the BOCA National Fire Prevention Code\1993	2.0 Hours
"Crackerbarrel Session"	1.5 Hours
"BOCA Code Change Hearings" as conducted at the Sheraton Hotel, Springfield, March, 1994	2.0 Hours
OTHER COURSES (VARIOUS SPONSORS):	
"the New England Building Officials Association Fall Seminar" as offered at the University of Massachusetts	10.0 Hours
"Floodplain Manager Front-End Analysis" as offered in Berryville, VA June 8, 9 and 10, 1994, sponsored by the Federal Emergency Management Agency (FEMA)and the SOZA Company	10.0 Hours
"Conducting Basic Fire Inspections" as offered by the Massachusetts Firefighting Academy at the City of Boston Fire Memorial Hall 115 Southampton Street, May 16 and 17, 1994	2.0 Hours
"the Municipal Management Institute" as offered at Middlesex College, March and April, 1994	10.0 Hours
"Earthquakes and Seismicity" as offered at the Sturbridge Host Hotel, Sturbridge, May 11, 1993, sponsored by the New England Building Code Assoc.	5.0 Hours

(Table 3 - Continued)

"Integrated Emergency Management Course: Hurricane" as offered by FEMA's Emergency Management Institute, February 14-18, 1994	10.0 Hours
"Firestopping" as offered at Kitty's Restaurant, Reading, September 29, 1994 as sponsored by the Massachusetts Building Commissioners and Inspectors Association(MBCIA)	2.0 Hours

A FINAL NOTE ON CERTIFICATION

The Board is pleased to announce that on October 27, 1994, the Building Officials and Code Administrators (BOCA), International approved the Commonwealth's application for entry into its *Accredited Provider Program*. The letter of acceptance from Mr. Len C. King, Chair of the Training Services Committee reads:

*"On behalf of BOCA International, I am pleased to report that the application of the Commonwealth of Massachusetts for Accredited Provider has been approved. Your education program has been evaluated and meets all standards as maintained by BOCA for quality continuing education programs. This approval demonstrates that the Commonwealth of Massachusetts has taken seriously its commitment to provide quality education to its members. As an accredited Provider you are authorized to use BOCA's Accreditation logo on publications advertising those activities that meet the quality standard. You may also use the following statement: "**The Commonwealth of Massachusetts has been approved by BOCA International as an Accredited Provider of continuing education programs.**"*

What does this approval mean? First, it means that a course or seminar that has been sponsored by the Board of Building Regulations and Standards may be used to satisfy the continuing education requirements not only for Massachusetts certification, but also for certification gained through the BOCA examination process. This makes life much easier for those who have taken the BOCA exams and wish to maintain their national certification while maintaining their Massachusetts certification.

Second, this approval is a great reward for all who have worked so diligently to make the certification process a reality. Historically, Massachusetts has been a leader on issues relating to education. Although we lagged, somewhat, with respect to the education of building officials, ***we are making progress***, and we will continue to this effort to the end.

CONSTRUCTION SUPERVISOR LICENSES SUSPENDED OR REVOKED

BY KEN LUCAS

At a recent hearing conducted by the License Review Committee, the licenses of two construction supervisors were suspended for a period of six months. Following the suspension, each individual must take and pass the commonwealth's construction supervisors license examination in order to be reinstated in the program. The two suspensions were issued to:

License Number 039976
Henry Komosa
Deerfield, MA

License Number 024416
Glen Nichols
Boxboro, MA

CSL and HIC News and Events

All Articles on CSL and HIC
by Ken Lucas

Construction Supervisor License (CSL) News:

The Board wishes to acknowledge and thank those local building officials who take the time to check the picture identification and physical license of those individuals filing for building permits. Over the last few weeks, we have received several calls from individuals whose licenses have expired. This is a good indication that local building officials are policing the program by requesting evidence of a ***valid license***.

However, there appeared to be a few localities where licenses remain unchecked. It is imperative that ***all*** local building officials confirm the validity of a license during the permitting process. The time it takes to do this is minimal, but the benefit is great. It could be extremely problematic if something goes awry on a job, and it is determined that the individual performing the work did not possess a valid license.

A construction supervisor ***must*** have a valid license on his person when applying for a building permit. Therefore, it is very simple to check the license and a picture identification (i.e. a drivers license) at this time. Also, it is recommended that a copy of the ***valid license*** be attached to the permit file.

Recently, an representative from the Office of the Attorney General has posed this question; how can a building permit application, identifying work that requires a license, be filed without showing the ***valid license number*** Notwithstanding the owner securing the permit, there is no reasonable response to this question. *Please ask for verification in all cases where licenses are required, even if you know the applicant.*

HIC News

The Home Improvement Contractor Program is quickly approaching its third year of existence and is finally beginning to catch on.

To date, the program has issued over \$100,000 in claims from the program's *Guaranty Fund* to homeowners who have suffered as a result of poor work on their homes, or who have been victimized by registrants of the program (i.e. absconding with funds without performing the contracted work). The claims were assessed to thirty (30) different registrants. Awards from the fund have been granted ranging from a minimum of \$300.$^{\underline{00}}$ to the maximum allowed, \$10,000.$^{\underline{00}}$.

In addition, at a hearing convened on January 25, 1995, the Director of the Home Improvement Contractor program assessed administrative penalties totaling \$48,000.$^{\underline{00}}$ against eight (8) different home improvement contractors, and revoked the registration of each. These penalties were in concert with recommendations made by the *HIC Advisory Board*, that body empowered by law to advise on matters concerning the Home Improvement Contractor Registration Process.

The eight (8) firms whose registrations were ***revoked*** are identified in the table below;

Registrants:	*City\Town:*	*Registration Number:*
Cardinal Home Improvements	*Pittsfield, MA*	*103387*
VR Remodelers, Inc.	*Framingham, MA*	*104149*
New England Craftsman	*Bristol, CT*	*108687*
Cardinal Siding Company	*Winchendon, MA*	*101962*
Thomas Construction	*Sharon, MA*	*108996*
Mass. Building and Remodeling, Inc	*Plymouth, MA*	*109064*
Spectrum Construction Co.	*Boston, MA*	*109839*
Advanced Home Design	*Lynn, MA*	*102588*

HIC ADVISORY

All municipal building departments should have received a bulletin from the Office of the Attorney General revealing that it is the duty of the appropriate person in the building department to verify that a home improvement contractor is registered with the Board. Most appear to be adhering to this notice, but some are not.

Please be advised that Massachusetts General Law (MGL) c 142A *requires* each municipal building department to designate a person to ascertain whether or not a contractor is a registered home improvement contractor ***prior to issuing a building permit*** (for work requiring registration). Failure to do so, may subject the department to liability.

Please ensure that a Home Improvement Contractor's Registration number appears on both the permit application and the permit card, and ***please check each contractors registration card at the time of application.***

Questions as to whether an HIC registration is valid, should be directed to the Office of the Board @ (617) 727-8598 or (617) 727-3200, extension 659.

REGARDING WORKERS' COMPENSATION INSURANCE

BY ROB ANDERSON

This article was originally printed as part of the March, 1992 issue of CODEWORD. It is printed again at the request of the Massachusetts Department of Industrial Accidents. The article has been modified slightly from the original.

On October 17, 1991 a letter was issued from the Department of Industrial Accidents (the department) regarding workers' compensation insurance. The letter makes reference to Massachusetts General Law c 152 § 25C. This section of law states that any state or local licensing agency shall withhold the issuance of or renewal of a license or permit to operate a business or to construct buildings in the Commonwealth unless the applicant provides acceptable evidence that he has properly complied with the workers compensation insurance requirements.

Although this law has been in effect since 1987, it was not generally enforced. In recent years, the lagging economy has sparked a rash of claims against compensation funds. Many of these claims were filed against companies who were not properly insured. As is the case in the auto insurance industry, the burden of the claims was suffered by those who were legitimately insured, not by those who were responsible. In order to ease the drain on compensation funds, the Commissioner of the Department of Industrial Accidents has made it clear that the provisions of MGL c 152 § 25C must been enforced.

Since a building official is in the business of issuing permits for construction, he must pay close attention to this topic. However, the department realizes that the building official is already overrun with his current duties, and does not wish to add to his workload. Yet, the fact remains that the law dictates that nearly all involved in the construction industry must be protected by this insurance and the most expedient method to control this requirement is through the permitting and licensing process. Therefore, the building official must become involved.

In an effort to streamline the process, the department has generated an affidavit program. This affidavit places the onus on the applicant to honestly profess whether or not he is properly insured under the provisions of c 152 § 25C, or that the provisions of this law do not apply. The applicant's signature on this document bears witness, under the pains and penalties of perjury, that he is truthful in his assertion.

The affidavit is attached to this document (to building officials only). The building official must present the affidavit to each permit applicant for signature, and store the original with each job file. A copy may be provided to the applicant upon request. There may be occasions when a building official is suspect as to the legitimacy of an applicant's claim to proper insurance coverage under this law. If this happens, one only needs to

call the information line established by the department. Through this service one can quickly verify whether a company)is adequately covered and if the policy is current. The number to dial is (617) 727-4900; extensions 401 through 405 are available to ensure rapid assistance. Almost every company needs to carry workers' compensation insurance. The only exception is an individual who is classified as a **sole proprietor**. However, if he were to incorporate, he too would need this insurance. The provisions of MGL c152 § 25C, attempts to create a means by which to monitor a system that has been in place for years.

WELCOME PAT BRENNAN

The BBRS would like to welcome Pat Brennan to the BBRS staff. Among her numerous duties, Pat is the clerk to the State Building Code Appeals Board and also manages the Manufactured Buildings Program. Pat brings a wealth of managerial experience from her previous position with the City of Boston, Inspectional Services Department.

Pat would like to take the opportunity to remind building officials that your participation (either by appearance or letter) in Board of Appeal cases in which you are involved is vitally important to the Appeals Board.

CONGRATULATIONS TO ED, BILL AND BRIAN

The BBRS would like to extend its congratulations to Ed Poskus, AIA (Building Commissioner, Ipswich), Bill Gedraitis (Building Commissioner, Middleboro) and Brian Gore, PE (BBRS) who have been elected to the Board of Directors of the New England Building Code Association (NEBCA). In addition Ed was recently elected President, Brian was elected as Secretary and Bill is the immediate Past President.

BUILDING CODE ACADEMY

Legislation has been filed to establish a Building Code Academy. In order to assist in determining the need for an academy, the BBRS has enclosed a questionnaire relative to your education and budget needs. Please take a few minutes to complete the attached questionnaire. The survey is strictly confidential and you may choose to omit your name. Please make every effort to complete the survey and return to the BBRS office (Attention: Brian Gore). Thank you in advance for your cooperation.

Please note that this questionnaire is only enclosed for building officials.

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CODEWORD

PUBLIC HEARING SCHEDULE

The Board of Building Regulations and Standards will hold a Public Hearing on May 9, 1995, at One Ashburton Place in Boston, to entertain changes to the Fifth Edition of the State Building Code. Some of the proposed changes effect:

- Fire Protection Systems
- Residential Sprinkler Systems
- Structural Load and Masonry Reference Standards
- Handrails and Guardrails
- Heat Detectors and Smoke Detectors
- Certification of Private Sector Inspectors

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Board of Building Regulations and Standards
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AFFIX LABEL HERE

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